

LOWER MAINLAND MOTORSPORT CENTRE
PRELIMINARY ASSESSMENT

FINAL REPORT

Submitted By:

NOVACORP CONSULTING INC.

in association with

REID CROWTHER & PARTNERS LIMITED

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ACKNOWLEDGEMENT

This study was funded by the Ministry of Lands, Parks and Housing. It was administered by a committee comprised of representatives from the Ministry funding the project, the Ministry of Industry and Small Business Development and the Greater Vancouver Regional District.

The responsibility for the content of this report is the consultant's alone. The conclusions reached herein do not necessarily reflect the opinions of those who assisted during this investigation or the provincial government which funded the study. Owing to the limited scope of this work, it is paramount for the reader to keep in mind that much more work must be done in areas such as site assessment, market analysis, economic impact and the like before definitive action can be taken.

The consultant would like to extend his thanks to the many groups and organizations who provided information and opinions during the course of this study. Many of these were motorsport groups, but several were organizations not directly connected with the recreational interests of the sport. Without the time taken by the individuals representing all of these organizations, a thorough understanding of the motorsport centre needs and issues would not have been possible.



EXECUTIVE SUMMARY

This study was carried out over a nine-month period from March through November, 1983. A summary of the purpose, findings and conclusions of the work undertaken is provided in this section of the report.

OVERVIEW AND PURPOSE OF THE STUDY

Motorsport includes a host of activities and events such as circuit racing, drag racing, oval track racing, motorcross and off-road vehicle competitions. These competitive activities involve thousands of participants, spectators and organizers on the Lower Mainland annually. Racing events tend to dominate the public's view of motorsport. However, it represents a much broader recreational pursuit. Hundreds of small groups and clubs are involved and many organize and participate in recreational and social activities such as swap meets, picnics, concourses and various types of display events.

The intention of this study was to address the problems associated with motorsport facilities in the Lower Mainland. It was commissioned to examine the feasibility of establishing a single motorsport centre, since this would consolidate facilities and possibly represent a solution to existing shortages and uncertainties. The centre would allow those involved in motorsport to

safely participate in various activities, to make use of appropriate facilities, and to function in a centre with secure tenure.

Existing facilities are geographically separated from each other. In some cases, they are inadequate for present needs while in other cases, land use conflicts or higher priority use will result in their closure over the near term. Thus, while interest in and demand for motorsport facilities is growing, those interested and involved in the sport are faced with the prospect of unavailable or unsuitable facilities in the years to come. Should this occur, the recreational and social value of motorsport as a leisure time activity will erode dramatically.

This preliminary feasibility assessment included the identification of user group requirements and the evaluation of a number of specific sites relative to these requirements. In order that a realistic feasibility assessment could be undertaken, one site was selected by the Consultant, amongst those evaluated, and used for purposes of costing the development required. A conceptual physical plan was prepared along with a profile of the operations and activities that could suitably be undertaken at the proposed motorsport centre. Finally, the financial implications of the project were examined from the point of view of its ability to support capital investment on its own and the need to acquire external financial contributions.

USER REQUIREMENTS

Potential users of the motorsport centre are categorized into three groups as described below:

- Motorsport Recreation ... including those numerous clubs representing various automobile, motorcycle, go-cart and off-road vehicle interests, some of which are competitive in nature and some of which are purely social in nature.

- Non-Motorsport Recreation ... including a number of groups, not referenced above, interested in using the proposed facility for recreational pursuits such as bicycling, BMX, picnics, camping and music concerts.
- Non-Recreation Sector ... including a variety of organizations which can make use of the type of facilities envisaged for commercial testing, driver training, movie or television commercial production and the like.

Facilities required by each of these groups were investigated, however, priority was placed on identifying the needs of those involved in motorsport as a recreational pursuit.

User needs and demands were translated into site requirements. It was determined from this preliminary analysis that the following major facilities should be incorporated into the overall project:

- a road race course ... of approximately four kilometres in length;
- an oval track ... of approximately 600 metres (3/8 mile) in length with potential to expand to approximately 800 metres (1/2 mile),
- a drag strip ... of approximately 1200 metres (3/4 mile) in length including the drag run-off area;
- an off-road course ... which can vary in length but which will require an area of ten to fifty acres depending on the utilization expected; and
- parking areas ... for the above facilities providing for a total capacity of 7,000 to 12,000 vehicles during peak periods in segregated areas.

The above facilities together will require in the range of 120 to 170 hectares of land. A variety of support and ancillary facilities will be required, should the project proceed. However, the above facilities are considered essential, and the capability of each site to accommodate them must be assessed.

SITE ASSESSMENT

A preliminary assessment of the following ten specified sites was carried out as part of this study:

- Action Raceway;
- Aldergrove Lake Regional Park;
- B.C.D.C. Property (Surrey);
- Burns Bog;
- Delta Air Park;
- Kent Raceway (Agassiz);
- Mission Raceway
- Tynehead Regional Park;
- Westwood Racetrack; and
- Whistler

The Consultant concluded that Aldergrove Lake Regional Park was the best amongst those examined, upon which to assess the feasibility of a motorsport centre. It is, however, important to interpret this selection within the scope of the study itself. The work carried out was preliminary in nature. Further detailed comparative analysis of several sites with high potential should be carried out before a final location for development is chosen, in addition to the many other steps to determine detailed feasibility and to gain the necessary approvals.

Despite the foregoing qualification on the Aldergrove Lake Regional Park site, it is, nevertheless, a location which could effectively serve as a motorsport centre. No matter which site is finally chosen, this study will prove worthwhile, since it conceptually compares development costs at a specific site with the capability of the site to fulfil recreational demands. Furthermore, it examines the ongoing costs and revenue generating capability of the project which will vary, but likely only marginally, depending on the final site selected.

Principal factors taken into account when alternative sites were being evaluated are listed below:

- location;
- serviceability;
- physical suitability;
- visual appeal;
- surrounding land use;
- ease of development;
- climate;
- access; and
- useability.

Conclusions drawn concerning the suitability of each site were based on the performance of that site relative to all of the above factors.

MOTORSPORT CENTRE DEVELOPMENT

It is important for the reader to understand the nature and size of the proposed motorsport centre. The physical facility requirements discussed earlier translate to a land requirement of 120 to 170 hectares. It is clear that strictly from a land use point-of-view, the proposed development is considerable. Furthermore, as described, the centre will be capable of staging both major international events as well as minor competitions without additional capital outlay.

Three physical development concepts were evaluated for the Aldergrove Lake Regional Park site. Each represents a practical alternative for developing the site into a motorsport centre. While these alternatives incorporate all basic facilities required to stage major motorsport events, it is expected that various project components would be provided or upgraded over time as demand warranted. The ultimate configuration could, for example, include pavement of all parking areas, extensive control and

V.I.P. facilities, and more extensive permanent seating capacity than is planned for the initial stage of development.

The principal variation amongst the three alternatives is the extent to which the Aldergrove Lake Regional Park is utilized. Alternative 1 makes use of the entire site, except for that portion already developed for recreational purposes, and includes separate facilities. Alternative 2 keeps the major facilities separate but ties them closer together, thus excluding a portion of the property from permanent development. Alternative 3 limits the amount of land occupied by combining the racecourse and oval track facilities.

The capital costs detailed in the report allow for the development of a motorsport centre which can effectively stage major international events as well as minor competitions without additional capital investment. The centre would also be capable of accommodating several activities and/or events at one time. Total capital costs, excluding land, for each of the three options investigated are as follows:

- Alternative 1 - \$10.9 million;
- Alternative 2 - \$12.0 million; and
- Alternative 3 - \$10.1 million.

These capital costs exclude the cost of acquiring land for the motorsport centre. They also exclude all "soft costs" incurred such as legal fees, interest costs during construction and costs associated with long-term financing.

The above capital cost estimates are based on full costing methods and construction of the centre as described in the report. Since costs will be a major concern in the implementation of this project, a number of ways of reducing the capital investment

required were examined. It is considered reasonable that specific measures including the use of equipment and materials from existing motorsport facilities, the reduction of paved parking areas, the negotiation of less than full market costs during construction, and the use of volunteer workers can lead to cost savings. These savings result in capital cost estimates being lowered to the \$8.3 million to \$10.2 million range as shown below:

	<u>Alternative 1</u>	<u>Alternative 2</u>	<u>Alternative 3</u>
Capital Cost Estimate	\$10,869,000	\$11,990,000	\$10,126,000
Possible Savings	2,264,000	1,816,000	1,858,000
<u>Revised Capital Costs</u>	<u>\$ 8,605,000</u>	<u>\$10,174,000</u>	<u>\$ 8,268,000</u>

MOTORSPORT CENTRE UTILIZATION

The proposed motorsport centre was planned in a manner which would ensure an acceptable mix in facility utilization between small user groups and major spectator events. The latter are expected to represent a revenue source which is critical to the ongoing viability of the project. Small groups will be asked to pay user charges. However, the amount which can be afforded by these users is limited and will not provide net income to the centre. Nevertheless, it is the accommodation of these small motorsport groups and their needs which is one of the primary objectives of the proposed centre. Social and recreational interests need to be accommodated as does the demand for regional and national spectator-oriented competitions.

It is anticipated that the motorsport centre will be used throughout the year. However, motorsport activity will be concentrated in the period from March through October. It is likely that use

of the facilities by the non-recreation sector will provide valuable revenue during the winter as well as during the week on a year-round basis.

A total of nine major national or international events are expected to occur annually once the centre has been operating for five years. Some thirty or forty regional events per year are expected in the same time frame, along with 35 to 40 local events. Some variations in the numbers occur due to the varying ability of the different layout alternatives to accommodate simultaneous events and activities. Week-day events are additional to these projections.

Estimated average attendance for national or international events ranges from 3,500 to 16,000 depending on the type of motorsport involved. Road races and drag races are expected to attract the greatest number of people. Attendance at regional events is expected to range from 1,200 to 6,000 people, while a local event is estimated to draw up to 1000 spectators.

While the above numbers provide an indication of the extent to which the motorsport centre will be used for competitive events, it is important to recognize that considerably more use of the development will be made for non-competitive social and recreational pursuits relating to motorsport. Furthermore, driver training, vehicle testing, music concerts and numerous other types of activities can be expected to be accommodated at the centre as well. In summary, a high utilization level of the planned facilities can be expected once the motorsport centre is operational. This use is also expected to lead directly to a variety of commercial opportunities for existing and new businesses in the general area to provide services and supplies to users of the site.

MOTORSPORT CENTRE VIABILITY

Revenues and operating costs for the proposed centre were estimated on the basis of its expected utilization. Principal sources of income will include gate receipts, concession sales and facility rental charges.

Due to the high levels of attendance expected, revenue and cost levels are significant and demonstrate the overall magnitude of the project on an ongoing basis. They are summarized for Alternative 1 in the following table.

MOTORSPORT CENTRE REVENUE/EXPENSE SUMMARY

ALTERNATIVE 1

1983 \$

	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
• Operating Revenue	\$418,800	\$553,700	\$845,400	\$1,191,700	\$1,303,000
• Operating Costs	267,000	313,800	410,200	513,800	546,800
• Operating Income	<u>\$151,800</u>	<u>\$239,100</u>	<u>\$435,200</u>	<u>\$ 677,900</u>	<u>\$ 757,000</u>

The operating income shown in the table excludes property and income taxes, depreciation, loan interest and capital repayment. It is expected to increase at a rate of close to 50 percent per annum during the first five years of motorsport centre operation.

The intent of the development is to make provision for the social and recreational interests of those involved as participants, club members, spectators, organizers and workers in motorsport activity. It is not reasonable, therefore, to assess the viability of the motorsport centre by strictly applying normal investment

analysis techniques such as return on investment and other similar types of calculations.

For purposes of this evaluation, overall motorsport centre viability was assessed on the following basis:

- the financial self-sufficiency of ongoing operations; and
- the likelihood that sufficient capital funding is available to cover the total initial expenditures required.

Financial self sufficiency of ongoing operations can be achieved under Alternative 1, as was demonstrated in the above revenue/expense summary. This is also true for the other alternatives.

Capital funding availability is expected to represent one of the greatest constraints to development. Specific sources of funds are varied but include both private sector and public sector organizations and groups. Based on estimated levels of revenue and expenses, the motorsport centre is also expected to be capable of repaying some debt financing on its own as demonstrated in the following table:

DEBT REPAYMENT CAPABILITY

ALTERNATIVE 1

1983 \$

	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
● Estimated contribution to capital	151,800	239,900	435,200	677,900	757,000
● Equivalent maximum mortgage (1)	1,191,000	1,882,000	3,413,000	5,317,000	5,937,000
● Reduced capital cost estimate - Alt. 1	8,605,000	8,605,000	8,605,000	8,605,000	8,605,000

The projected ongoing financial self-sufficiency of the proposed centre, along with its capability to repay a portion of the debt, provides significant leverage for securing additional equity funding. Major private sector companies should be approached for contributions to specific facilities in return for advertising and promotional benefits. Specific segments of the regional and provincial governments should also be approached for the same purpose.

A final assessment of the financial viability of the motorsport centre development must be carried out during the detailed planning process. Preliminary estimates show that the centre can

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- (1) The Equivalent Maximum Mortgage represents the debt which could be paid off by the available "contribution to capital" should the debt be calculated on a term of 25 years and an annual interest charge of 12% compounded annually.

generate substantial levels of revenue and attract thousands of participants and spectators on a monthly basis. Furthermore, it is expected to satisfy the needs of thousands of people and many organizations in southwestern British Columbia who/which are involved directly or indirectly with this sport. While the project, in its entirety, is not expected to provide a commercial rate of return, specific components are likely to be commercially attractive to the private sector.

In summary, the financial capability of the proposal in combination with the recreational and social benefits which will be derived, indicate that the concept of a motorsport centre should be evaluated and planned in more detail.

LOWER MAINLAND MOTORSPORT CENTRE
PRELIMINARY ASSESSMENT

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1. INTRODUCTION

This document reports on a study of motorsport facility development in the Lower Mainland area of British Columbia. Work was carried out on this project over a nine month period from March through November, 1983.

As stated in the Terms of Reference for the work, the objective of the study was as follows:

" ... to assess the preliminary feasibility of a motorsport centre as the optimal solution to the land problem of motorsport groups in British Columbia".

The project was carried out by NOVACORP CONSULTING INC. of Vancouver. Site assessment and engineering analysis work was provided by REID CROWTHER & PARTNERS LIMITED. A preliminary review of noise attenuation concerns was undertaken during the study by BARRON & ASSOCIATES.

BACKGROUND

Motorsport is reported to be the largest of the spectator sports in North America. It is increasing in popularity across the continent and this is true as well in British Columbia.

No accurate account exists of the number of people resident in the Lower Mainland who are motorsport enthusiasts. However, it is safe to say that they number in the tens of thousands and represent participants, volunteer workers, organizers and spectators. One major event alone can easily draw 10,000 to 15,000 people at existing facilities. World class events held elsewhere in Canada and the United States can draw 100,000 spectators or more for one racing weekend.

As the popularity of the sport increases, so does the requirement for suitable facilities. It is important to realize that hundreds of small clubs and organizations are actively involved in this recreational activity in the Vancouver area. While large events will draw large crowds, extensive use of motorsport and related facilities by small collections of enthusiasts places significant demand on existing tracks and related facilities.

Motorsport covers a wide variety of activities. From the competitive recreation point-of-view, it includes oval track racing, circuit racing, drag racing, rallying, go-karting, four-wheel drive events and motocross, to list a few. From the non-competitive point-of-view, recreational interests include car shows, auto concours, swap meets, meetings, picnics and a variety of other social gatherings and events.

A number of these activities require different types of track facilities and support areas, while many of the facilities (eg. viewing stands, concessions, parking areas, etc.) are similar in each case. Consequently, a number of separate tracks and a wide variety of associations and interest groups have formed in the Lower Mainland.

For numerous reasons, some of the existing facilities are less suitable than is desired by both participants and spectators. Additionally, some operating groups are experiencing financial

problems while others are faced with the necessity to renew leases on a short-term basis or to find alternate sites. Two principal Lower Mainland facilities, Action Raceway and Westwood Racetrack, are expected to close in the near future.

During 1982, the concerns of motorsport enthusiasts and the issues surrounding the sport became more evident and more widely recognized. The idea of centralizing motorsport activities in one area evolved and has received considerable attention. The premise is that the following benefits can be achieved with such a "one-site" facility:

- improved use of the allocated land area due to the involvement of several types of motorsport activity and the likely involvement of a variety of non-motorsport activities;
- ability to serve a variety of users from competitive groups through to those involved in presently unmanaged recreational activity;
- stronger appeal through centralized and more efficient advertising and promotion;
- lower total capital cost resulting from the sharing of support facilities;
- potential for greater private sector and government support and longer term commitments;
- greater public identification with the sport and its facilities;
- potential for financial self-sufficiency of operations;
- increased support and lower resistance from the general public due to the centralization of facilities; and
- improved facilities and services for participants and spectators of this increasingly popular sport.

A number of organizations in British Columbia are, to varying degrees, involved with and/or interested in motorsport facilities

and activity. Late in 1982, it became evident that the three principal sites in the Lower Mainland currently supporting motorsport activity were facing different types and varying degrees of problems.

The increasing popularity of motorsport, the large following of this activity as an important recreational and social pursuit, and the increasing pressures on existing facilities to relocate, prompted action on the part of the government to undertake a review of the concerns and issues associated with motorsport activities in B.C. Previous research and investigations had failed to solve the increasingly important problem of where and how to accommodate motorsport activity. The Ministry of Industry and Small Business Development, along with the Ministry of Lands, Parks and Housing and the Greater Vancouver Regional District, took steps to examine some or all of these problems by commissioning a study to review the concept of a "motorsport centre" or complex.

This document reports on the preliminary assessment of developing a motorsport centre to accommodate most motorsport interests in the Lower Mainland. Physical options other than that of a motorsport centre were not investigated during this evaluation. It is hoped that this report will provide the basis for indepth examination of one or more sites, and detailed planning for a motorsport centre.

REPORTING STRATEGY

Results of work carried out are reported in the following manner:

- User Potential and Requirements ... which summarizes the type of facilities required by user groups and translates these into site requirements;

- Site Identification and Assessment ... which includes descriptions of each site investigated, the criteria for site evaluation and a priority listing of the Consultant's opinion of the site that is most amenable for study purposes;
- Physical Development Concept ... which justifies and presents three development alternatives for the site considered to be the best of those investigated;
- Capital Cost Analysis ... which describes the basis on which capital cost estimates were prepared and the total expenditure required for each alternative;
- Operational Profile ... which describes the important operational factors which impact directly on motorsport centre viability, the number of events and attendance expected;
- Operating Revenues and Costs ... which describes the ongoing financial position of the centre and the basis on which it was projected;
- Viability Assessment ... which describes the financial performance of the proposed centre relative to its overall costs; and
- Development Implications ... which identifies, and discusses qualitatively, a number of impacts arising from motorsport centre development.

Detailed information and data which was collected during the project is included in the appendices of this report.

2. USER POTENTIAL AND REQUIREMENTS

As part of this evaluation of motorsport centre development, a variety of research was undertaken concerning the demand for motorsport facilities by existing and potential user groups. This chapter summarizes findings concerning the types of user groups which would likely use the proposed centre and the basic physical requirements associated with these groups. Basic physical parameters were used during the site evaluation stage of the work to ensure that acceptable locations could accommodate the physical facilities intended.

POTENTIAL USER GROUPS

Exhibit I (following) lists a variety of organizations and groups who are directly or indirectly concerned with motorsport activity in the Lower Mainland. Each of these organizations was invited to submit a brief and to present verbally, its concerns and comments concerning motorsport centre development. The groups listed did respond as requested. A variety of groups and organizations were invited who did not respond in this manner.

It should be noted that a large number of motorsport oriented groups and organizations exist in the Lower Mainland and throughout British Columbia. Involvement by individuals in each of these organizations ranges from a few to several hundred. As a result, it was not possible to contact and interview every organization

EXHIBIT I

USER GROUPS INTERVIEWED

- Alfa Romeo Owners' Association
- Fifty - 567 Club
- Vintage Car Club of Canada
- Western Off-Road Racing Association (WORRA)
- Pacific International Street Rod Association (PISRA)
- CAN-AM Pullers Association
- Vintage Automobile Racing Club
- Canadian Council of Corvette Clubs
- Lower Mainland Oval Racing Association (LMORA)
- British Columbia Automobile Association (BCAA)
- Ministry of Forests
- British Columbia Museum of Transportation, Science and Industry
(The Transportation Collection)
- Four Wheel Drive Association of B.C.
- Westwood Motorcycle Road Racing Club (WMRRC)
- B.C. Custom Car Association
- Motorsport B.C. (Canadian Automobile Sport Clubs - CASC)
- B.C. Snow Vehicle Association
- Westwood Karting Association
- Graffiti Car Club
- Sports Car Club of B.C.
- Specialty Vehicle Association of B.C.
- Ministry of Transportation and Highways
- Motorsport Emergency and Turn Workers Association
- Langley Quarter Midget Association
- Bicycling Association of B.C./BMX Association of B.C.
- Justice Institute of British Columbia
- Ministry of Lands, Parks and Housing
- Canadian Pacific Trials Association
- Greater Vancouver Mustang Association
- British Columbia Safety Council
- Canadian Motorcycle Association

involved. The thirty-one groups who did submit briefs and were interviewed are felt to represent a valid cross-section of those involved in this recreational activity.

At this stage of the study, a classification system began to emerge based on the types of potential users of the proposed facility. Most represented recreational interests directly involved with motorsport activity. Other potential user groups were involved with recreational pursuits not directly involved with motorsport activity but which were in need of suitable facilities. Finally, a number of organizations represented the non-recreational sector which could make use of the proposed centre. This initial categorization of user groups is summarized below:

- Motorsport Recreation ... including those numerous clubs representing various automobile, motorcycle, go-cart and off-road vehicle interests, some of which are competitive in nature and some of which are purely socially in nature.
- Non-Motorsport Recreation ... including a number of groups interested in using the proposed facility for recreational pursuits not included above, such as bicycling, BMX and snowmobiling.
- Non-Recreation Sector ... including a variety of organizations which can make use of the type of facilities envisaged for commercial driven testing and driver training (e.g. the Justice Institute of British Columbia, the B.C. Automobile Association and the B.C. Safety Council.)

While variations to these classifications concerning the type of activity likely to be generated at the motorsport facility are described later in this report, it is important for the reader to recognize the distinction at this stage between recreational use, especially that which is motorsport oriented, and non-recreational

use of the proposed centre. A variety of user groups are represented in both of these sectors.

PHYSICAL FACILITY REQUIREMENTS

Those organizations and groups who were interviewed provided their opinions concerning the type of facilities which should be incorporated into a motorsport centre. Among the opinions expressed included such items as physical facilities which the groups would require as an organization to make use of the development.

Exhibit II (following) summarizes the stated needs of potential users as presented at this stage during the work. A wide variety of smaller facilities and types of equipment were also indicated which would eventually be incorporated into a motorsport centre. Many of the items which were indicated as being required (eg. washrooms, concessions, pit areas, etc.,) were not listed separately at this stage but are accounted for in later sections of this study.

A number of observations concerning Exhibit II are worthwhile at this point.

- While a road course, oval track, drag strip and an off-road course are mentioned by a variety of organizations, the specific characteristics of the required facility itself may vary. The road course and off-road course tend to be the most adaptable to user groups who will use these facilities. While the standard oval track is suitable for most users, motorcyclists desire a hard pack, dirt oval, while go-cart enthusiasts require a smaller facility. Similarly, most user groups require a paved drag strip but dirt or sand drags are equally popular as well.
- The smaller motorsport groups and organizations tend to incorporate family and social activity with their motorsport interests. Club meetings and events for these organizations, therefore, have been associated clearly with such

EXHIBIT II

STATED REQUIREMENTS OF USER GROUPS (1)

ORGANIZATION INTERVIEWED	RACING TRACKS				MISC. STRUCTURES				MISC. AREAS			
	ROAD COURSE	OVAL	DRAG STRIP	OFF-ROAD	TOWER	MTG. ROOMS	GARAGES WORK-SHOP	PARKING	PAVED AREA/PATH	UNPAVED DISPLAY AREA	PICNIC AREA	CAMP-GROUND /B.V. PARK
MOTORSPORT RECREATION • Alfa Romeo Owners' Ass'n • Fifty-57 Club • Vintage Car Club of Canada • Western Off-Road Racing Ass'n • Pacific Int'l Street Rod Ass'n • CAN-AM Pullers Ass'n • Vintage Automobile Racing Club • Canadian Council of Corvette Clubs • Lower Mainland Oval Racing Ass'n • Four Wheel Drive Ass'n of B.C. • Westwood Motorcycle Road Racing Club • B.C. Custom Car Ass'n • Motorsport B.C. • Westwood Karting Ass'n • Graffiti Car Club • Sports Car Club of B.C. • Specialty Vehicle Ass'n of B.C. • Motorsport Emergency & Turnworkers Ass'n • Langley Quarter Midget Ass'n • Canadian Pacific Trials Ass'n • Greater Vancouver Mustang Ass'n • Canadian Motorcycle Ass'n	•		•			• • • •	•(2)			• •	• •	• • • •
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NON-MOTORSPORT RECREATION • B.C. Museum of Transportation, Science & Industry • B.C. Snow Vehicle Ass'n • Bicycling Ass'n of B.C. • B.C. Automobile Ass'n • Ministry of Forests • Ministry of Transportation & Highways • Justice Institute of B.C. • Ministry of Lands, Parks & Housing • British Columbia Safety Council						•	•(2)					

(1) The stated needs of user groups reflect those facilities felt to be important. Some groups did not indicate a need for facilities which they would, in fact, require such as parking areas and meeting rooms. Thus, while the table is representative of the important facilities required, it can be concluded that the need for minor and support facilities is likely greater than is indicated.

(2) Enclosed display and storage space.

facilities as meeting rooms, picnic areas, campgrounds and open space.

- Many of the smaller motorsport groups and organizations are interested more in non-racing events such as auto displays, concours and swap meets than in racing events. This type of use needs to be accounted for in the motorsport centre. It is a popular requirement and non-racetrack area use can occur independently of race track utilization by other groups.
- Non-motorsport recreation groups interviewed exhibit specialized requirements. While these requirements may be met at the motorsport centre, separate facilities will be needed to do so.
- Non-recreation user groups tend to have much more in common with motorsport users than does the non-motorsport recreation component. This is due to the fact that the activities of these organizations, which could impact on the proposed facilities, are vehicle oriented. The extent to which these users can be accommodated will strongly add to overall utilization of the centre, since their demands tend to be year round instead of seasonal.

Provision for developing all major and important facilities was made during this study. Later chapters describe the major components of the development which arise, principally, from this analysis of user needs.

MOTORSPORT CENTRE SITE REQUIREMENTS

From the physical point of view, the site selected for motorsport centre development must meet certain criteria. These conditions arise primarily from the types of uses that the site is expected to accommodate based on the above requirements.

While site requirements are preliminary at this stage, it is appropriate to describe the principal physical features that should be accommodated. The noting of physical descriptions was done prior to site evaluation so that the merits of each location

could be assessed relative to site attributes and to the requirements of those who will use the motorsport centre.

In order to maximize land-use on the selected site, the following major facilities need to be incorporated into the overall project:

- a road race course ... of approximately four kilometres in length;
- an oval track ... of approximately 600 metres (3/8 mile) in length with potential expansion to approximately 800 metres (1/2 mile);
- a drag strip ... of approximately 1200 metres (3/4 mile) in length including the drag run-off area;
- an off-road course ... which can vary in length but which will require an area of from ten to fifty acres depending on the utilization expected; and
- parking areas ... for the above facilities providing for a total capacity of 7,000 to 12,000 vehicles during peak periods in segregated areas.

A number of the other physical requirements which consume considerable land (eg. campground area or R.V. sites) have not been ignored at this stage. Rather, the basic motorsport facilities described above are considered to be of primary importance during site selection and layout. Additional requirements would be accommodated to the extent practical and possible, once detailed planning work is undertaken.

Based on the research undertaken, the following site evaluation considerations were identified in addition to those listed above:

- a varying terrain without severe topography is ideal for road course development;
- a long level area is required for drag strip development;

- surrounding hills to provide good vantage points for spectators at all facilities;
- separate accessibility by facility and parking area is desirable in order to segregate events;
- parking areas should be located as close as possible to the facility for which they are used;
- the site should be significantly separated from existing or future residential development;
- the site should be reasonably accessible from all parts of the Lower Mainland;
- sufficient land in the range of 120 to 170 hectares should be available to accommodate the development of required facilities; and
- supporting infrastructure such as hotels, motels and restaurants should be encouraged to develop adjacent to and within a reasonable distance of the site.

These and other considerations will be elaborated on in the next chapter of this report. They represent, however, principal requirements of the potential user groups of a motorsport centre.

3. SITE IDENTIFICATION AND ASSESSMENT

Initial work during the course of the study concentrated on the identification of an appropriate site which was the most amenable for motorsport centre development during this preliminary assessment. This chapter includes a discussion of the advantages and disadvantages of each location. It concludes with a priority ranking of the most appropriate areas. Detailed information concerning nine of the ten sites examined is included in Appendix A.

EVALUATION CRITERIA

A variety of parameters were taken into account during the site review process. In a number of instances, where sites could not be excluded for obvious and logical reasons, these parameters were investigated more fully than in other cases. Each is summarized and explained below, although their order is not representative of the relative importance of each.

- Location

- Proximity to Vancouver & other B.C. centres
- Proximity to U.S. centres
- Proximity to motorsport user groups
- Proximity to potential non-motorsport users

- Serviceability

- Extent of existing water, power and sewer servicing
- Proximity of water, power and sewer connections
- Proximity to accommodation facilities and related services

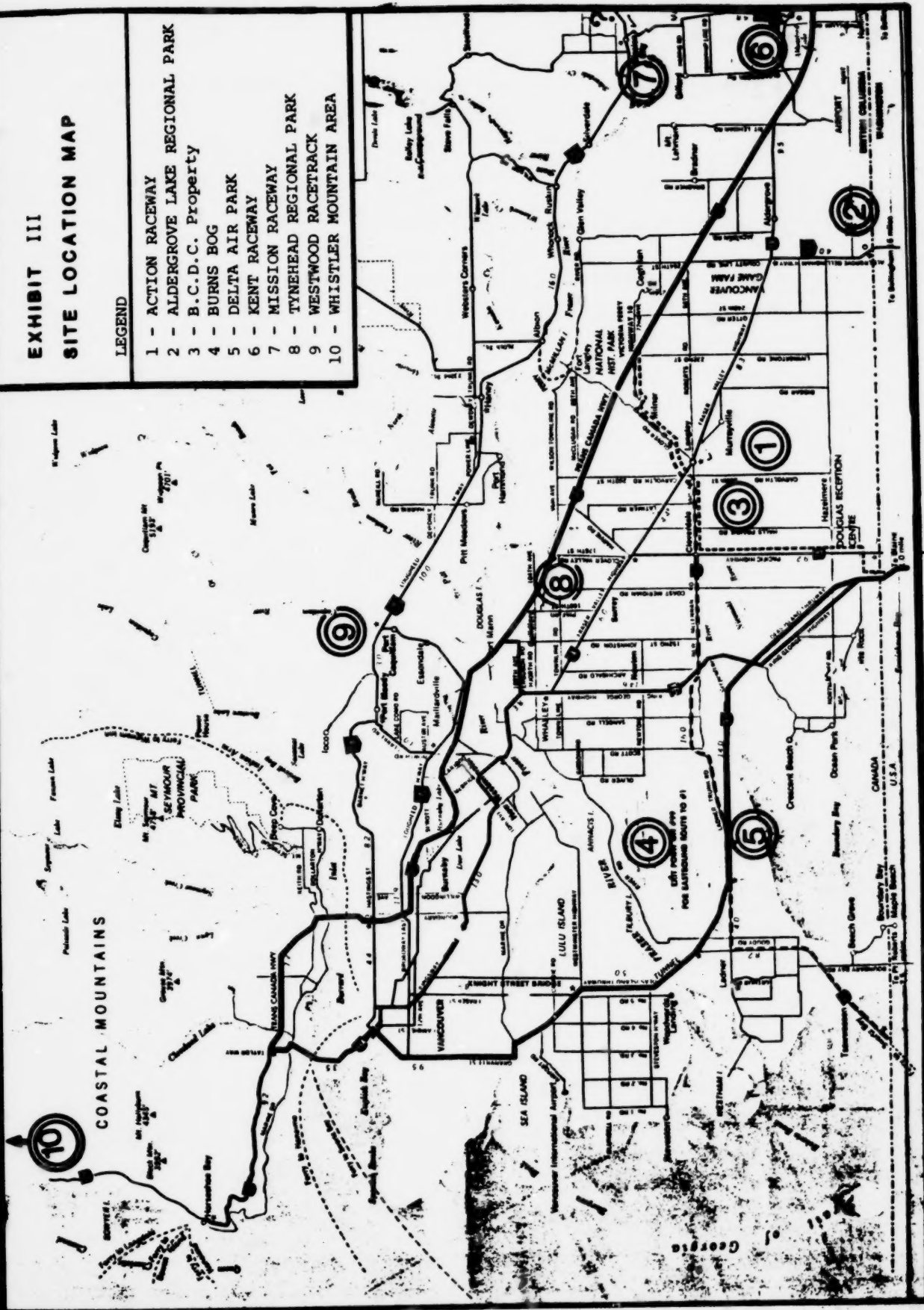
- Physical Suitability
 - Amount of developable land (120 to 170 hectares required)
 - Topographic suitability
 - Availability of flat areas for dragstrip and parking
 - Soils and sub-soil suitability
 - Extent of controlled buffer zone
 - Vegetation coverage
- Visual Appeal
 - Topographic attractiveness/contrast
 - Type and extent of vegetation
- Surrounding Land Use
 - Current land use zoning
 - Timing until non-compatible land-use intrusion
 - Existing owner/tenant resistance
- Ease of Development
 - Jurisdictional Parameters
 - availability at minimum cost due to ownership
 - possible benefits and costs and therefore support or resistance by public bodies
 - Environmental Parameters
 - agricultural land reserve
 - noise concerns
 - User Group Acceptability
 - prime motorsport clubs
 - non-prime motorsport users
 - non-motorsport users
 - Alternative Site Uses
 - existing uses
 - existing plans
 - timing until availability
 - alternate uses and their value
- Climate
 - Rainfall during operational period
 - Days of rain during operational period
- Access
 - Proximity to major highway linkages
 - Proximity to major road connections

EXHIBIT III

SITE LOCATION MAP

LEGEND

- 1 - ACTION RACEWAY
- 2 - ALDERGROVE LAKE REGIONAL PARK
- 3 - B.C.D.C. Property
- 4 - BURNS BOG
- 5 - DELTA AIR PARK
- 6 - KENT RACEWAY
- 7 - MISSION RACEWAY
- 8 - TYNEHEAD REGIONAL PARK
- 9 - WESTWOOD RACETRACK
- 10 - WHISTLER MOUNTAIN AREA



- Useability

- Potential to accommodate most motor-sport users

- Potential for longer term expansion of motorsport or non-motorsport use

Site investigations and assessments took into account the development of a motorsport complex encompassing road race, drag race and oval race facilities at a minimum. Thus, the capability of any given site to accommodate only a portion of these facilities did not form part of this assessment. However, when site planning for the centre was carried out, an overall concept was kept in mind.

Qualitative and quantitative evaluations were carried out where possible and meaningful. In addition, a variety of technical material was considered during the site analysis phase of the work.

It is important to realize that there are no locations examined in this study which will meet every test of suitability as each evaluation parameter is considered to be important to motorsport complex development.

SITES CONSIDERED

As mentioned previously, a total of ten sites were considered as part of the site selection work. These locations are listed alphabetically below and are identified on the map in Exhibit III (opposite).

- Action Raceway (located in Campbell Valley Regional Park);
- Aldergrove Lake Regional Park;
- B.C.D.C. Property (located in Surrey);
- Burns Bog;
- Delta Air Park;
- Kent Raceway (located in Agassiz);
- Mission Raceway;

- Tynehead Regional Park;
- Westwood Racetrack (located in Coquitlam); and
- Whistler (including the area around Whistler and Blackcomb Mountains).

While all of the above sites were considered, in some cases, it became evident early during the analysis that the location was impractical for specific reasons. The advantages and disadvantages of each are discussed in the following sections. It can be noticed that more information is provided in those situations where a site required more careful evaluation as to its potential.

ACTION RACEWAY/CAMPBELL VALLEY REGIONAL PARK

Action Raceway presently includes a 1/4 mile paved oval racetrack with supporting facilities (e.g. bleachers, concessions, pit area and picnic area) located in the 540 hectare Campbell Valley Regional Park. The track leases 12 hectares of land for motorsport purposes from the Greater Vancouver Regional District (G.V.R.D.).

The Regional Park is considered as a Nature Park and the G.V.R.D. feels that expansion of motorsport facilities is inconsistent with the park's objective of preserving nature. For this principal reason, continuation of motorsport activity in this location beyond the next few years is considered impractical and unlikely. The G.V.R.D. Park Committee and Board have always agreed that the motorsport facilities should be closed. Currently, operations and development are restricted and Action Raceway is operating on a one-year lease extension which expires in November, 1983.

A summary of the suitability of Action Raceway for a motorsport centre, relative to each of the evaluation parameters discussed earlier, is provided in the table on the following page. An



EXHIBIT IV
AERIAL VIEW
ACTION RACEWAY



aerial photograph of the site, adjacent land and access roads is provided in Exhibit IV (opposite).

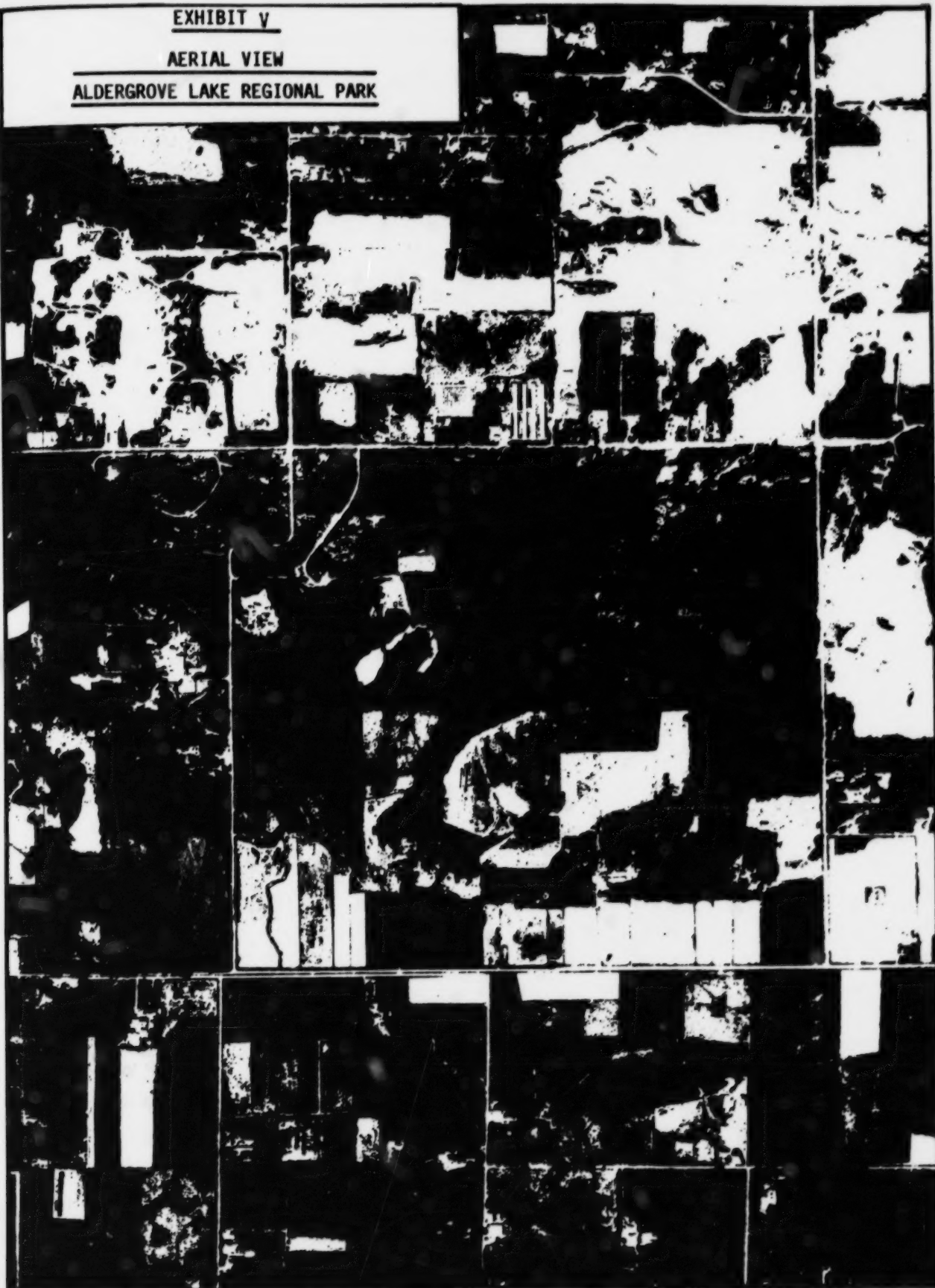
Evaluation Parameter	Comments
• Location	• Acceptable from most points of view.
• Serviceability	• Hydro is available, potable water from wells is acceptable, and a sewer system is not likely.
• Physical Suitability	• While existing area is suitable for an oval track, it is insufficient to accommodate the needs of a complex.
• Visual Appeal	• Excellent
• Surrounding Land Use	• Increasing conflicts as residential development increases.
• Ease of Development	• Very difficult, if not impossible, from jurisdictional, environmental and social acceptance
• Climate	• Average relative to other locations
• Access	• Average with some upgrading required for heavy traffic loads.
• Useability	• Very restricted

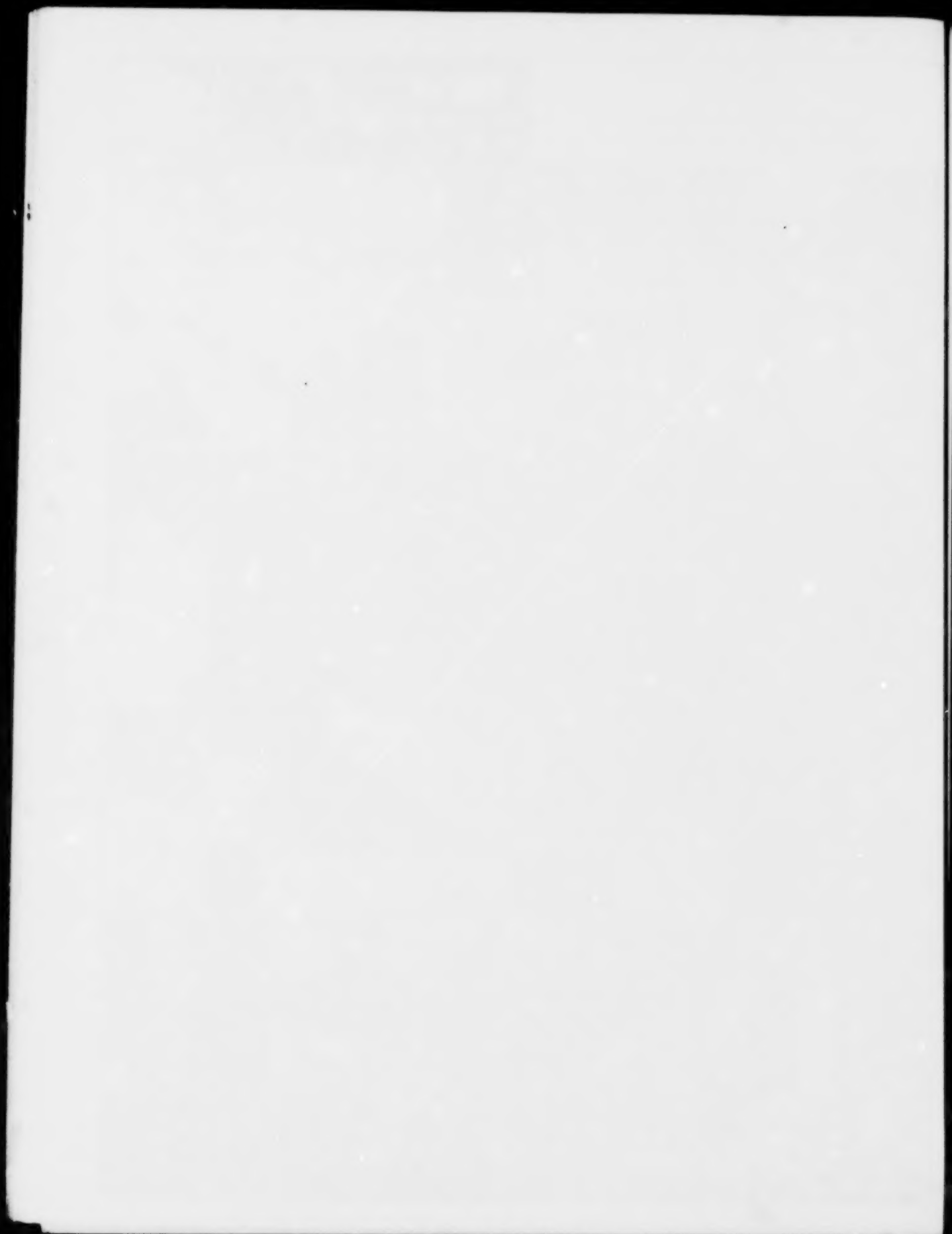
The above table demonstrates that, while Action Raceway is a useable site from several points of view, it is realistically an unacceptable site due to jurisdictional, environmental, availability and physical constraints.

EXHIBIT V

AERIAL VIEW

ALDERGROVE LAKE REGIONAL PARK





ALDERGROVE LAKE REGIONAL PARK

This property of some 280 hectares is located 3 kilometres south of Aldergrove, adjacent to the international boundary. About a quarter of the property has been developed into a public park for recreational use.

On the basis of the location and general nature of the land, it is well suited to the purposes proposed. Sufficient area is available to construct the basic facilities required, accessibility is good, limited development exists or is planned in the surrounding area and the property is owned by the G.V.R.D. Some potential constraints to development do exist, including the fact that mineral rights on about 34 hectares are not owned by the G.V.R.D., the site is located within the Agricultural Land Reserve (ALR) and a mobile home park is currently being developed immediately southwest of the site.

A summary of the suitability of Aldergrove Lake Regional Park for a motorsport centre, relative to each of the evaluation parameters discussed earlier, is provided in the table on the following page. An aerial photograph of the site, adjacent land and access roads is provided in Exhibit V (opposite).

Evaluation Parameter	Comments
● Location	● An acceptable distance by highway from Vancouver and easy access from Washington State.
● Serviceability	● Electricity is available as is water from wells. Waste disposal is via septic tank.
● Physical Suitability	● Area available is adequately sized and suitable topographically for the purposes proposed.
● Visual Appeal	● High level of appeal for spectators and participants alike.
● Surrounding Land Use	● Primarily rural with a number of gravel pits, although development is taking place that could cause a conflict on the Matsqui Indian Reserve.
● Ease of Development	● Reasonable ... the site is likely suitable to all major users... development is constrained because it is located in the ALR.
● Climate	● Acceptable but not the best of those sites evaluated.
● Access	● Very good with close highway and trans-border connections.
● Useability	● The site demonstrates extremely good potential to accommodate a variety of motorsport activities and off-road activity in nearby gravel pits is possible.

EXHIBIT VI

AERIAL VIEW

BCDC PROPERTY



The comments in the table demonstrate that, while a number of obstacles need to be overcome, the Aldergrove Lake site generally exhibits the characteristics that would prove desirable in a motorsport centre.

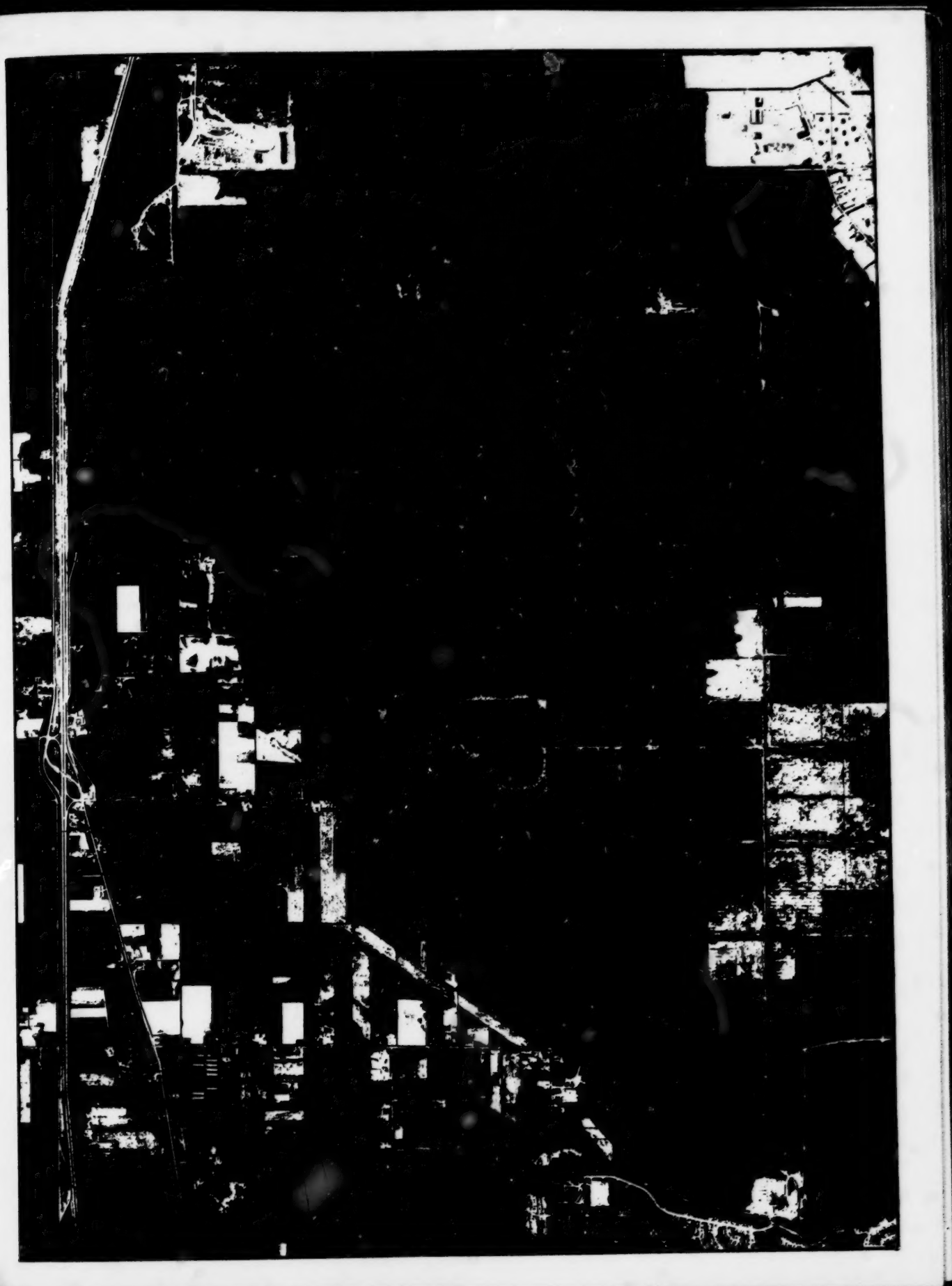
B.C.D.C. PROPERTY (SURREY)

This site of some 144 hectares in southeastern Surrey was originally purchased by the B.C. Petroleum Corporation as a possible oil refinery site. The B.C. Development Corporation, who subsequently acquired the property, has assessed its suitability for a variety of purposes. B.C.D.C. is currently looking for a buyer for the property.

Generally, the site is suitable for motorsport centre development although a number of critical problems remain in this regard. Road access is less than adequate for heavy traffic loadings caused by major events and, although improvements are planned, their timing is uncertain. Residential development has taken place in the general area and further encroachment by residential construction is anticipated in the near to medium term. Finally, although the site is topographically and physically suitable for motorsport activities, some resistance from surrounding land owners and tenants, as well as the Land Commission, since some 39 hectares are presently located in the ALR is expected to take place should this alternative be pursued.

A summary of the suitability of the B.C.D.C. property in Surrey for a motorsport centre, relative to each of the evaluation parameters discussed earlier, is provided in the following table. An aerial photograph of the site, adjacent land and access roads is provided in Exhibit VI (opposite).

Evaluation Parameter	Comments
● Location	● Within relatively easy reach of principal user groups and spectator markets.
● Serviceability	● Major trunk services are not available at the site and their extension, if required, could be expensive.
● Physical Suitability	● Very suitable based on existing topography, location and extent of land available.
● Visual Appeal	● High level of appeal for participants and spectators alike.
● Surrounding Land Use	● Increasing degree of urban development in areas to the south and west.
● Ease of Development	● Land could likely be relatively easily acquired, although some municipal and environmental constraints may cause delays and increased costs.
● Climate	● One of the better sites based on rainfall during the motorsport season.
● Access	● Restrictive for large amounts of traffic, although improvements are planned.
● Useability	● Sufficiently large to accommodate most motorsport activity although long-term expansion area is limited.





The comments in the above table clearly indicate that the B.C.D.C. property offers real potential for motorsport centre development, although a number of disadvantages do exist, as do a number of obstacles that must be overcome.

BURNS BOG

This area comprises some 32 square kilometres of peat bog in North Delta. The principal use of the land at present is peat moss harvesting, although a small area is used for Vancouver sanitary landfill. The majority of Burns Bog is privately owned and the long term potential for the land, once peat has been removed and fill has been provided, is likely to be industrial in nature.

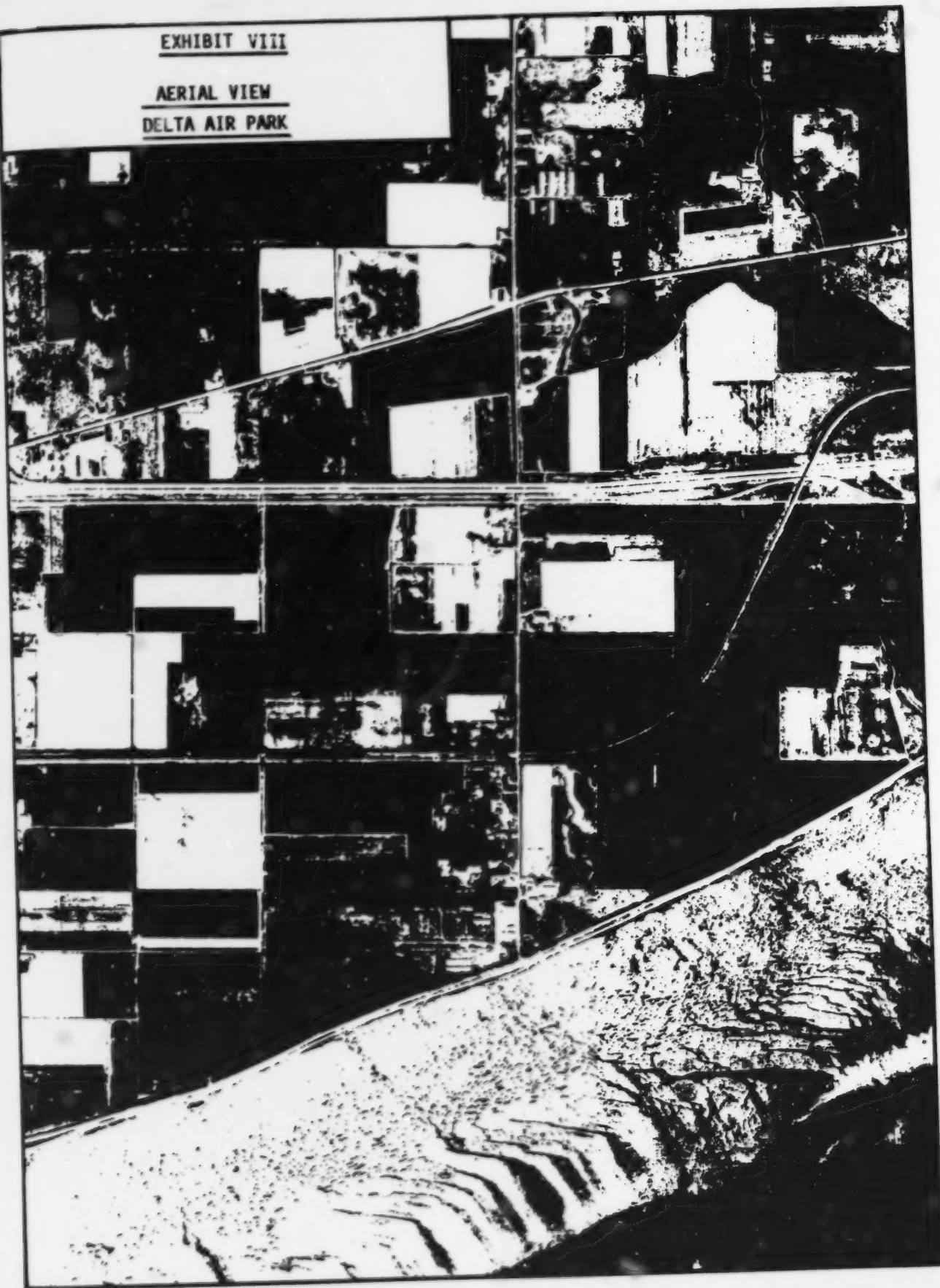
Although this site is extensive, easily accessible and well located, construction constraints are severe in areas where peat moss still exists. Where peat has been removed, fill is required prior to development. The land is privately held which increases the complexity and cost of acquisition; hospitals to the south and major residential developments in Sunshine Hills to the northeast would likely generate substantial resistance to motorsport activities; and, easterly winds occasionally transfer sanitary landfill odours to the area which would be objectionable to spectators. In summary, enough obstacles exist to make Burns Bog an unacceptable location, at the present time, for motorsport centre development.

A summary of the suitability of Burns Bog for motorsport activity, relative to each of the evaluation parameters discussed earlier, is provided in the table on the following page. An aerial photograph of the site, adjacent land and access roads is provided in Exhibit VII (opposite).

Evaluation Parameter	Comments
● Location	● Excellent relative to principal user groups and spectator markets.
● Serviceability	● Most trunk services are available to the boundary of the site.
● Physical Suitability	● Sufficient flat land but restrictive foundation for development.
● Visual Appeal	● Poor due to peat moss, lack of topographic contrast and limited vegetation.
● Surrounding Land Use	● Conflicting to the south and east, with potential increased residential encroachment in the future.
● Ease of Development	● Jurisdictional problems would be minimized, although land assembly and costs could pose problems as will the existing use of the property.
● Climate	● One of the driest of all sites examined.
● Access	● Excellent to the borders of the site, although road upgrading to the location of primary facilities would be required.
● Useability	● Could accommodate most motorsport activity once peat was removed, and long-term potential is good as additional areas become available.

EXHIBIT VIII

AERIAL VIEW
DELTA AIR PARK



It is evident from the table that the difficulties and disadvantages associated with utilizing Burns Bog for a motorsport centre cannot likely be overcome in the short-term.

DELTA AIR PARK

This site is located in South Delta adjacent to Highway 99 and Boundary Bay, and comprises some 180 hectares. The air park serves as the base and grass air strip for small aircraft. It has been in operation for nearly twenty years. Other than the air strip and aircraft parking area, the land is primarily used for farming.

This property has an excellent location, dry climate, sufficient land and excellent access relative to the needs of a motorsport centre. All facilities could be relatively easily located on the site. The key disadvantage associated with Delta Air Park, however, is the fact that it is privately owned. Not only does this create a potential land assembly problem, but it also means that a centre, if located here, would be burdened with the payment of a market value for the property. Two other distinct disadvantages with Delta Air Park include the totally flat terrain, which would require substantial modification for some motorsport activities, and the lack of trees which lowers the overall attractiveness of the site. While it is likely that most user groups would easily accept the location, others might not and conflicts would likely arise with the ALR due to the agricultural value, although somewhat restricted, of the property.

A summary of the suitability of Delta Air Park for a motorsport centre, relative to each of the evaluation parameters discussed earlier, is provided in the table on the following page. An aerial photograph of the site, adjacent land and access roads is provided in Exhibit VIII (opposite).

Evaluation Parameter	Comments
● Location	● Well located relative to Vancouver and Washington spectator markets and participants.
● Serviceability	● Hydro is available, water is supplied by wells and septic tanks are used for waste disposal.
● Physical Suitability	● Although drainage is poor, the land can be easily developed, but lack of hills and vegetation will increase costs and lessen appeal.
● Visual Appeal	● Limited due to lack of topographic contrast and trees.
● Surrounding Land Use	● Virtually all surrounding land is used for agriculture and this, along with Boundary Bay Airport re-activation, should minimize local objections.
● Ease of Development	● Unreasonable constraints are not expected, except for land assembly and the possible requirement to remove the land from the ALR.
● Climate	● One of the driest of all sites examined.
● Access	● Excellent via Highway 99.
● Useability	● Problems for some motorsport groups requiring more severe topography.

Comments in the table indicate that Delta Air Park is suitable from many points of view for motorsport activities. A number of potentially major obstacles, however, remain to be overcome.

KENT RACEWAY

This facility, of some 50 hectares, is located in the District of Kent some 5 kilometres northwest of Agassiz. The District leases the land. Facilities include a small, paved oval track and a motocross course. Kent Raceway land is located against a steep mountain slope and is next door to the Kent Maximum Security Institution.

Utilization of the land leased by Kent Raceway for a motorsport centre is considered to be unacceptable for the following reasons:

- the site is much too small for the purposes proposed; and
- the site is located too far from principal user groups and principal spectator markets for a continuous use complex oriented towards large and small events alike.

The Regional District of Fraser-Cheam has identified a much larger site, of some 400 hectares, along Highway 7 between Hope and Agassiz. While details of this property are not known, the size is certainly much more acceptable. Nevertheless, the distance from large and small user groups, as well as spectators located in the Lower Mainland, make this location unacceptable for the purposes intended. The desired frequency of use, and the availability of the proposed centre to a wide array of potential users, would not be possible should it be located at such a distance from Vancouver.

A summary of the suitability of the Kent Raceway site for a motor-sport centre, relative to each of the evaluation parameters discussed earlier, is provided in the table on the following page.

Evaluation Parameter	Comments
● Location	● Restrictive and unacceptably distant from the location of user groups and principal spectator markets.
● Serviceability	● Likely adequate but not an issue due to the severity of other constraints.
● Physical Suitability	● Much too small for a motorsport centre.
● Visual Appeal	● Attractive area and setting.
● Surrounding Land Use	● Few conflicts likely should the facility expand.
● Ease of Development	● Environmental concerns could prove to be a problem, although other constraints unlikely.
● Climate	● Relatively high rainfall relative to other proposed sites.
● Access	● Reasonable although immediate access road would need upgrading to accommodate high traffic volumes.
● Useability	● Limited to only a few motorsport activities.

The comments in the above table echo those in the preceding paragraph. For the multi-purpose, multi-use centre envisaged, the Kent Raceway site is considered to be inadequate and unacceptable.

EXHIBIT IX

AERIAL VIEW

MISSION RACEWAY



MISSION RACEWAY

This site comprises some 30 hectares on the banks of the Fraser River in Mission. It includes a sand drag strip, a motocross track and a number of ancillary facilities. The site and the improvements are owned by the B.C. Custom Car Association, the principal user of the existing facilities. Mission Raceway is located within the Fraser River floodplain and a dyke presently exists along the northern boundary.

In general, this property is reasonably well suited to its present purpose and has excellent access. Zoned industrial, it is well away from potential residential development but noise effects are felt in the downtown area. The entire site comprises only 32 hectares at the present time. Although some additional facilities could be squeezed into the property, it is not possible to construct the extent and variety of major facilities proposed for a motorsport centre at the Mission Raceway site. Furthermore, although ownership and control of the site rests with a group interested in motorsport, rainfall statistics for Mission indicate that this is one of the least desirable areas examined.

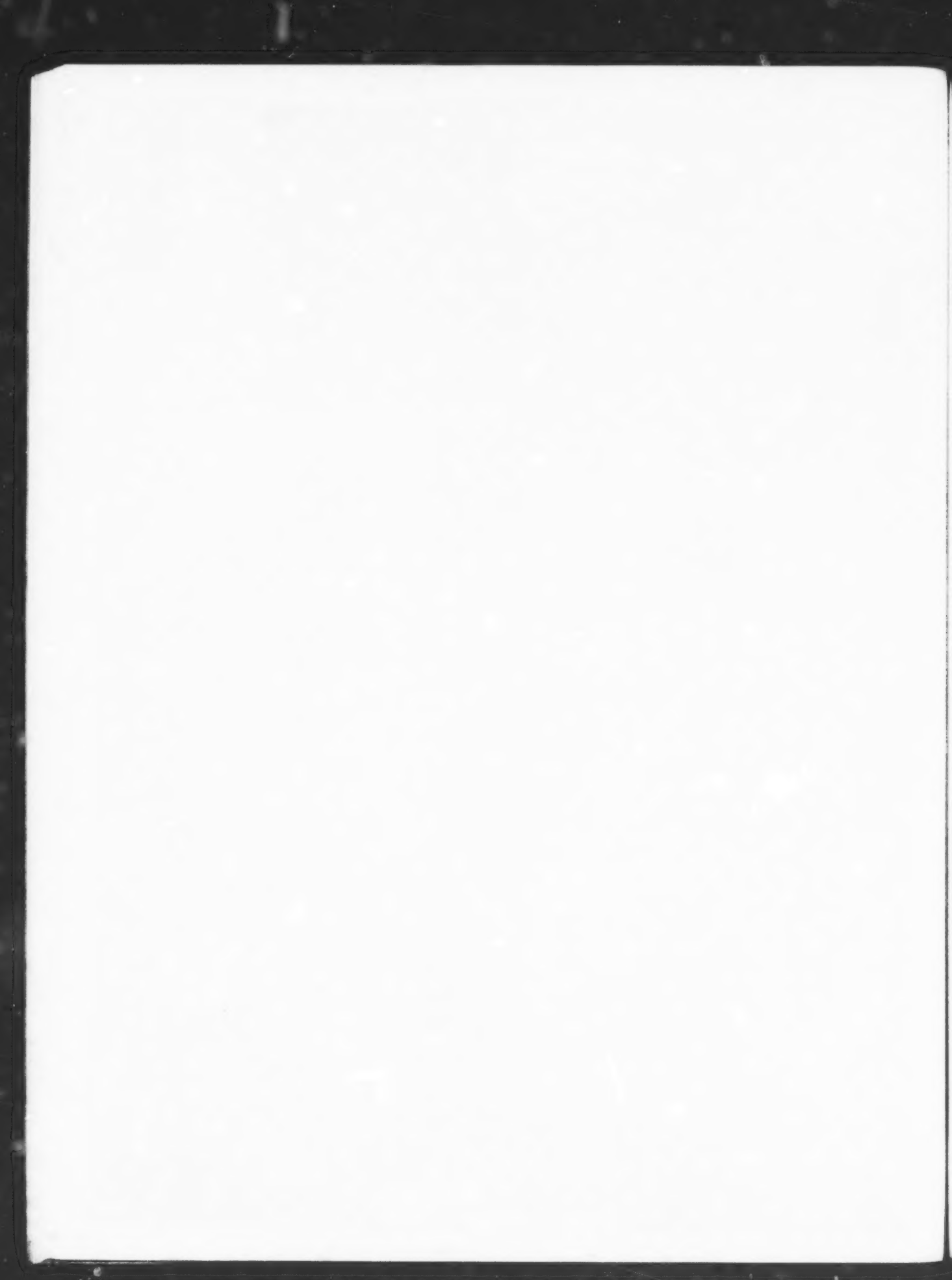
A summary of the suitability of the Mission Raceway site for a motorsport centre, relative to each of the evaluation parameters discussed earlier, is provided in the table on the following page. An aerial photograph of the site, adjacent land and access roads is provided in Exhibit IX (opposite).

Evaluation Parameter	Comments
● Location	● Somewhat distant from, but acceptable relative to, principal user groups and spectator markets.
● Serviceability	● Excellent .. fully serviced for gas, water, sewer and hydro.
● Physical Suitability	● Acceptable for existing facilities but an insufficient area for the motorsport centre proposed.
● Visual Appeal	● Good .. especially with river frontage.
● Surrounding Land Use	● Excellent since the site is surrounded by the Fraser River, the highway and industrial land.
● Ease of Development	● Acceptable from the jurisdictional and environmental points of view, but some other user groups would likely resist.
● Climate	● Poor since it is one of the highest rainfall sites examined.
● Access	● Very good and being improved.
● Useability	● Restrictive due to available land .. all principal motorsport activities could not be accommodated.

EXHIBIT II

AERIAL VIEW
TYNEHEAD REGIONAL PARK





The comments in the table indicate that the Mission Raceway site has some significant attributes and some significant deficiencies. The latter outweigh the former when the use of the property is evaluated for a multi-use, multi-purpose motorsport centre.

TYNEHEAD REGIONAL PARK

This 256 hectare property, shown in the aerial photograph (Exhibit X opposite), is owned primarily by the G.V.R.D. and located in North Surrey, adjacent to the Trans-Canada Highway. Tynehead Regional Park has been designated, but remains undeveloped, for park purposes. The establishment of a major zoo by the Tynehead Zoological Society on a major portion of the land is currently being examined.

The likelihood of a major zoo being established on the Tynehead site is uncertain. If this did occur, a motorsport centre would be incompatible, and insufficient land would remain for use of the area for this purpose.

From most points of view, Tynehead Regional Park is considered to be an ideal location for a motorsport centre. The topography is suitable, the area is large enough to incorporate a buffer zone, location and access are excellent and the rainfall during the motorsport season is lower than most other areas examined. Several key constraints, however, are associated with the development of the Tynehead land as a motorsport centre. The proposed development of a zoo at the site, even if it does not go ahead, would likely cause delays in any case to the acceptance of the site for motorsport activity. Land surrounding Tynehead Regional Park is being developed, and is planned for further development, under the classification of suburban residential. Nevertheless, the site does suit motorsport centre requirements in addition to requirements relating to a variety of other uses for the property.

Comments are provided in the following table, relative to each of the site evaluation parameters identified earlier, for motorsport centre development in Tynehead Regional Park.

Evaluation Parameter	Comments
● Location	● Excellent vis-a-vis user groups and spectator markets.
● Serviceability	● Electricity and natural gas are available throughout the site, while water and sewer trunk services are located nearby.
● Physical Suitability	● Land area, topography, vegetation and soils are all suitable for the purposes proposed.
● Visual Appeal	● Excellent .. an attractive site for facilities and activities proposed.
● Surrounding Land Use	● Constraining since suburban residential development is taking place and is expected to continue.
● Ease of Development	● A major constraint since municipal and regional authorities, as well as environmental groups, will likely pressure for non-motorsport use.
● Climate	● Very good with less rainfall than most other sites.
● Access	● Excellent .. located on the Trans-Canada Highway.
● Useability	● Excellent .. good potential for the accommodation of most motorsport uses and for longer-term expansion.

Comments in the table reflect the fact that the Tynehead site is considered very attractive. They also clearly identify a number of major problems associated with land use in the surrounding area and ease of development.

WESTWOOD RACETRACK

This site encompasses a road race course which is located on some 120 hectares of Crown land north of the Coquitlam town centre and immediately west of the Coquitlam River. The racetrack is approximately three kilometres north of the Lougheed Highway and is bounded on three sides by B.C. Hydro rights-of-way. Extensive gravel deposits occur immediately east of, and beneath the eastern portion, of the leased property. Furthermore, plans are in place to develop much of the Westwood Plateau for residential purposes.

The Westwood site is characterized by a number of major advantages, not the least of which is the established facilities and supporting infrastructure for road racing and go-cart racing. Westwood has been used for circuit racing since it opened in 1959. In addition, access to the site is good, and its location is reasonably close to principal user groups and spectator markets.

The Westwood site, however, is also characterized by a number of problems relating to its continued use and, indeed, its expansion into a multi-purpose motorsport centre. The Municipality of Coquitlam has plans for residential development on the Westwood Plateau. As a result, the current lease restricts major capital improvements on the property. It expires in 1985 and renewal is not expected. As well, major gravel deposits are located beneath the eastern portion of the property. It is uncertain whether extraction will eventually take precedent over residential development on that portion of the property. It is likely, however, that either of these uses will preclude, or severely

EXHIBIT 111

AERIAL VIEW

WESTWOOD RACETRACK





limit, on-going operation of the Westwood facility over the medium-term.

Finally, the topography of the property, in conjunction with the amount of land available, would cause difficulties for significantly expanded use for motorsport activity. While including an oval track at the site is a possibility, construction of a drag strip and run-off area could be difficult at best. Furthermore, immediate access and internal circulation need improvement and rainfall during the motorsport season is the highest of all sites investigated.

A summary of the suitability of the Westwood site for a motorsport centre, relative to each of the evaluation parameters discussed earlier, is provided in the table on the following page. An aerial photograph of the site, adjacent land and access roads is provided in Exhibit XI (opposite).

Evaluation Parameter	Comments
● Location	● Within relatively easy reach of principal user groups and spectator markets.
● Serviceability	● Currently no trunk services are connected to the site, although they are located in the area.
● Physical Suitability	● Suitable for some major motorsport uses, but potentially difficult to develop for others.
● Visual Appeal	● Extremely attractive area for participants and spectators alike.
● Surrounding Land Use	● Not restrictive at the present time, although encroachment by residential development is beginning to the south.
● Ease of Development	● Jurisdictional approval is likely the most severe constraint to development due to alternative uses for the site.
● Climate	● Relatively poor with high rainfall and fog during the season.
● Access	● Good access from most areas.
● Useability	● Limited potential to accommodate most user groups, and longer-term expansion is impractical.

Comments in the table indicate that Westwood exhibits a number of distinct advantages. However, major disadvantages exist as well when the site is assessed relative to motorsport centre development. In addition, there is known resistance to continued operation of the facility.

WHISTLER MOUNTAIN AREA

Developments in and around Whistler Mountain, some 130 kilometres from Vancouver, have taken place at a rapid rate over the past several years. The area has been transformed into a four-season destination resort.

Extensive investigation of the Whistler Mountain Area was not carried out. While the recreational nature of that part of British Columbia is consistent with motorsport activity, its accessibility for the purposes proposed is restrictive. The distance to Whistler for large and small motorsport groups, as well as spectators located in the Lower Mainland, make this location unacceptable for a motorsport centre. The desired frequency of use and availability of the proposed centre to a wide array of potential users would not be possible should it be located at such a distance from Vancouver. Furthermore, a location to the north would severely restrict the involvement of participants and spectators from south of the border.

A summary of the suitability of the Whistler Mountain Area for a motorsport centre, relative to each of the evaluation parameters discussed earlier, is provided in the table on the following page.

Evaluation Parameter	Comments
● Location	● Restrictive and unacceptably distant from principal user groups and spectator markets.
● Serviceability	● Services could be provided.
● Physical Suitability	● Availability of large tracts of land for a motorsport centre could be a problem.
● Visual Appeal	● Extremely attractive setting.
● Surrounding Land Use	● Extensive residential, condominium and accommodation development has taken place and is continuing to occur which would constrain motorsport activities.
● Ease of Development	● Likely environmental and jurisdictional constraints, as well as lack of acceptance by user groups.
● Climate	● Average precipitation during motorsport season relative to other sites, but late and early snows would be restrictive.
● Access	● Poor relative to other locations.
● Useability	● Likely only a limited number of motorsport activities could occur in the area.

Comments in the table indicate clearly that the Whistler Mountain Area is not considered to be suitable for the development of a motorsport centre of the scope envisaged.

EXHIBIT XII
RATING SUMMARY OF SITES INVESTIGATED

LOCATION	RATING	EVALUATION PARAMETERS								
		LOCATION	SERVICE- ABILITY	PHYSICAL SUITABILITY	VISUAL APPEAL	SURROUNDING LAND USE	EASE OF DEVELOPMENT	CLIMATE	ACCESS	USABILITY
ACTION RACEWAY	• Excellent				•					
	• Good	•	•					•	•	
	• Poor			•		•				•
	• Unacceptable						•			
ALDERGROVE LAKE	• Excellent			•	•					•
	• Good	•	•			•	•	•	•	
	• Poor									
	• Unacceptable									
B.C.D.C. (SURREY)	• Excellent				•					
	• Good	•	•	•			•	•		•
	• Poor					•			•	
	• Unacceptable									
BURNS BOG	• Excellent	•						•		
	• Good		•						•	•
	• Poor				•	•				
	• Unacceptable			•			•			
DELTA AIR PARK	• Excellent	•						•	•	
	• Good		•	•		•				•
	• Poor				•		•			
	• Unacceptable									
KENT RACEWAY	• Excellent				•					
	• Good		•			•	•		•	
	• Poor			•				•		
	• Unacceptable	•								•
MISSION RACEWAY	• Excellent		•			•			•	
	• Good	•			•					
	• Poor			•			•	•		
	• Unacceptable									•
TYNE HILL AD	• Excellent	•		•	•			•	•	•
	• Good		•							
	• Poor					•	•			
	• Unacceptable									
WESTWOOD RACETRACK	• Excellent				•	•				
	• Good	•	•						•	
	• Poor			•			•	•		•
	• Unacceptable									
WILSTER	• Excellent				•					
	• Good		•					•		
	• Poor			•		•	•		•	•
	• Unacceptable	•								

SITE ANALYSIS SUMMARY

A total of ten separate locations were investigated with respect to their suitability as a site for a multi-purpose motorsport centre. The advantages and disadvantages of each have been compared. An assessment of each site as to its potential motorsport centre development according to each evaluation parameter is provided in Exhibit XII (opposite).

The evaluation of sites, as summarized in Exhibit XII, is an indication of the suitability of one location, relative to the others considered, to accommodate a multi-purpose motorsport centre. Evaluation parameters include a variety of factors which reflect not only physical suitability, but the likelihood of acceptance and the likelihood that existing obstacles to development can be overcome.

It is important to understand that this comparative analysis provides the reader with preliminary indications only. Once detailed site investigation is carried out and discussions are held to obtain approvals, constraints to development may arise which cannot be overcome. Nevertheless, the investigations and analyses carried out to date are considered to be sufficient to allow attention to be focused on one (or two) preferred location(s).

Finally, the layout of Exhibit XII tends to encourage the reader to add the "excellents", the "poors" and so on. This tendency should be discouraged since some parameters tend to be more important than others and all must be assessed relative to each other. Furthermore, an assessment of "unacceptable" in any key category is likely sufficient to eliminate a site from consideration. This is true even if other rankings for the same site are extremely high.

In conclusion, the reader is encouraged to base their opinion on the information presented. It should also be remembered that the prime objective of this work is to evaluate the development of a multi-use centre at one location. Hence, the possible utilization of two or three sites in combination with each other was not assessed or considered.

SITE EVALUATION CONCLUSIONS

Investigation and assessment of the ten potential sites led to conclusions regarding the locations which were grouped as follows:

- sites considered to be unsuitable; and
- sites considered to be the most suitable.

Each of these groups is addressed briefly in the following paragraphs:

Unsuitable Sites

The following locations were considered to be unsuitable for the purpose of this evaluation:

- Action Raceway/Campbell Valley Regional Park ... due primarily to conflicts with the use of the park area;
- Burns Bog ... due primarily to availability and the costs and timing associated with development;
- Kent Raceway ... due primarily to its distance from Vancouver;
- Mission Raceway ... due primarily to shortage of land area; and
- Whistler ... due primarily to its poor accessibility for the purposes intended.

A priority ranking of these was not carried out.

Possible Sites

Five locations showed sufficient capability of accommodating the proposed centre. However, a wide variation exists in this category between the "preferred" and the other properties. The sites, in order of preference, are listed below:

- Aldergrove Lake Regional Park ... considered as being the preferred site amongst those investigated;
- Tynehead Regional Park ... ranking high in most categories, but being less likely of jurisdictional acceptance;
- B.C.D.C. Property ... considered acceptable from most points of view, but certainly ranking behind the two 'front-runners';
- Delta Air Park ... ranking behind the B.C.D.C. lands since its private ownership is expected to be a significant constraint; and
- Westwood Racetrack ... which, although considered marginally suited to the purposes proposed, ranks well behind the other four more suitable sites.

No one site is considered perfect. All have some constraints which must be overcome if progress is to be made towards the establishment of a motorsport centre. It should be remembered that this is a preliminary study and that issues concerning community impact and access must be addressed during detailed analysis of motorcentre development.

4. PHYSICAL DEVELOPMENT CONCEPT

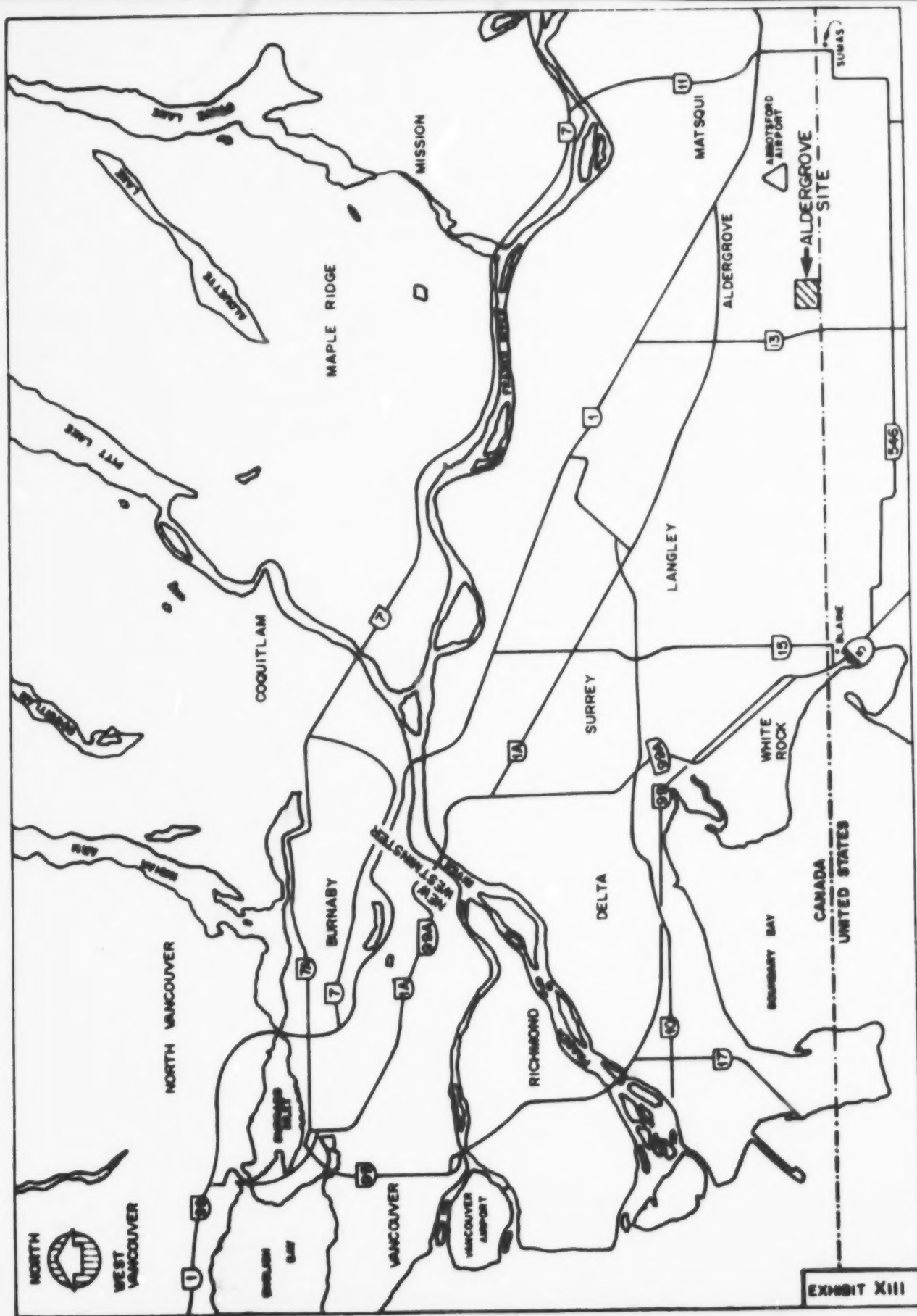
The Aldergrove Lake Regional Park site was re-examined relative to user requirements and site characteristics following its identification by the Consultant as the best site of those investigated. While investigations remained "preliminary" at this stage, their objective was to develop practical concepts and to evaluate the ongoing viability of these concepts.

This chapter includes descriptions and characteristics of three development options for the Aldergrove site. While any centre requires a variety of facilities, equipment and functional areas, graphical representations of the three alternatives, which are included in this chapter, focus on those facilities which take up large amounts of land.

Other development configurations for the motorsport centre are possible. The alternatives described were developed for this preliminary assessment only.

Major facilities, which require significant land areas and are incorporated into each development alternative, were identified and described briefly in Chapter 2. They are as follows:

- a road race course;
- an oval track,
- a drag strip;



- an off-road course; and
- parking areas.

Physical concept alternatives discussed in this chapter represent different but realistic approaches to utilizing the Aldergrove site as a motorsport centre. Final track layout and orientation which takes best advantage of land topography would take place should detailed planning be carried out. At that time detailed layout and design expertise would be necessary to facilitate overall planning of the site.

Finally, it will become evident from reading the following sections that the portion of the existing regional park which has already been developed for recreational use, has been left untouched under all three alternatives. Land which is currently allocated for public recreational use was considered to be external to the property. This assumption may not, hold up should detailed planning proceed. If the area was to be incorporated into the overall development plan, the site exhibits even more capability to accommodate a variety of motorsport and non-motor-sport users and their related service areas.

The location of the Aldergrove Lake Regional Park site, relative to other communities and principal road linkages on the Lower Mainland is illustrated in Exhibit XIII (opposite).

ALDERGROVE SITE CONSTRAINTS

Re-examination of the Aldergrove site, led to three specific utilization constraints. Each relates to existing or potential use of the property and is described briefly below:

- Public Park Utilization - The northwestern section of the G.V.R.D. land is presently developed for public recreational use. This type of use is retained under each of the proposed alternatives. Visual and sound separation between this area

and that which would be used for the motorsport centre are incorporated into each option.

- Sub-Surface Gravel and Sand Resources - Various portions of the site have proven gravel and sand deposits. The rights to these reserves on part of the property are owned by an organization in the United States. This fact must be considered when assessing development options. It is possible for the resource rights to be purchased outright or for the area where mineral rights are owned by others to be left undeveloped. Otherwise, development which does take place may be subject to modification at a later date.
- Alternate Utilization - For those portions of the land not used for motorsport activities, a variety of alternate use possibilities exist. Development plans described in this report make efficient use of the available land in recognition that other recreational or commercial activities could and will probably be located in undesignated areas.

While a minimum number of constraints to developing the Aldergrove Lake site as a motorsport centre exist, these three impact directly on the formulation of alternate concepts for the project. A number of specific alternatives are discussed in the following section.

DEVELOPMENT ALTERNATIVES

Following careful review of various issues and analysis of a number of site specific concerns, three approaches to development were identified. Each is considered to represent a practical option for the future, but each approaches the issues in a different manner. The three options are described below.

Physical Development Alternative 1

The first physical concept for the Aldergrove site was prepared on the premise that all property not currently developed for recreational use could be used as an integral part of the motorsport centre. This alternative has no utilization constraints and is described graphically in Exhibit XIV (following). It is also

based on the assumption that the road course, drag strip and oval track are developed as three independent facilities sharing a common site, allowing for the coincidental use of each. A combined off-road vehicle and motocross course is incorporated into the plan since activities of this nature are in high demand and require significant amounts of land.

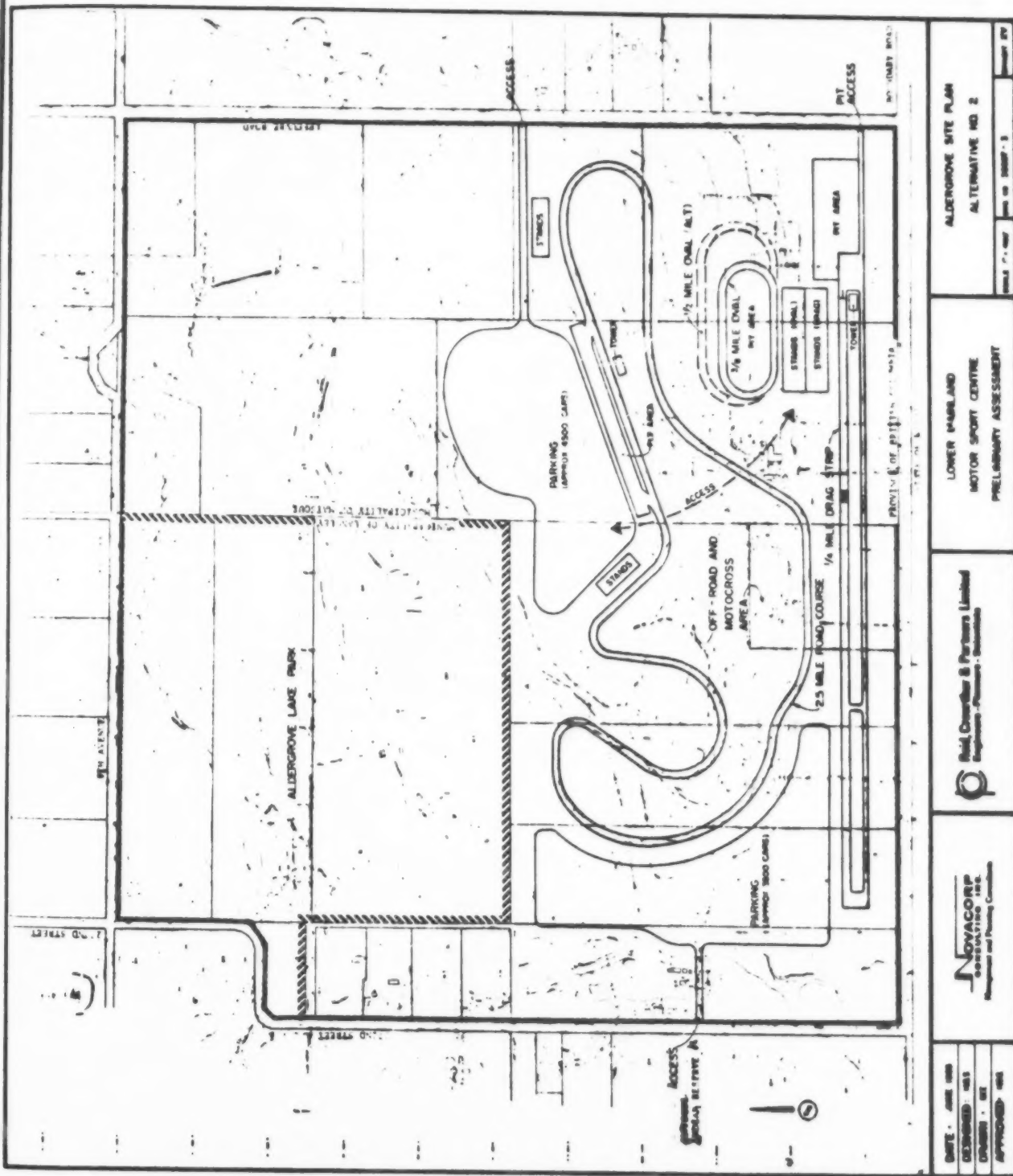
Course layouts, as shown, take into account accessibility (from both parking areas and access roads), topography, potential for shared facilities, spectator appeal and other factors. The proposed configuration, however, is intended to be typical of the approach to development for this site and not a final layout for the project.

Parking areas are shown in Exhibit XIV in suitable locations relative to the topography of the site and race course configurations. Separate road access is provided to each lot. The following parking capacities are characteristic of Alternative 1:

- Road race course: 5000 cars (approximately 14 hectares)
- Drag-strip: 3500 cars (approximately 10 hectares)
- Oval track: 2500 cars (approximately 7 hectares)

The basis on which land is allocated to parking space is described in Appendix B.

The above capacities ensure that major events can be held at each facility simultaneously. The largest road race or drag race events, however, could draw crowds which exceed the parking capacity of individual lots. Under these circumstances, overflow into other lots will occur. When a major road race event is being held, a local drag race could also be staged, but two major events at the same time would create problems.



DATE: JAN 1988 DESIGNED: GRS DRAWN: GRS APPROVED: GRS	 NOVACORP CORPORATION Management and Planning Consultants	 P Field, Chandler & Partners Limited Engineers - Planners - Scientists	LOWER MAINLAND MOTOR SPORT CENTRE PRELIMINARY ASSESSMENT	ALDERGROVE SITE PLAN ALTERNATIVE NO. 2 SCALE: 1" = 100'
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Exhibit XIV illustrates that separation from the portion of the park currently developed for recreational use is ensured through physical distance and a vegetation buffer zone.

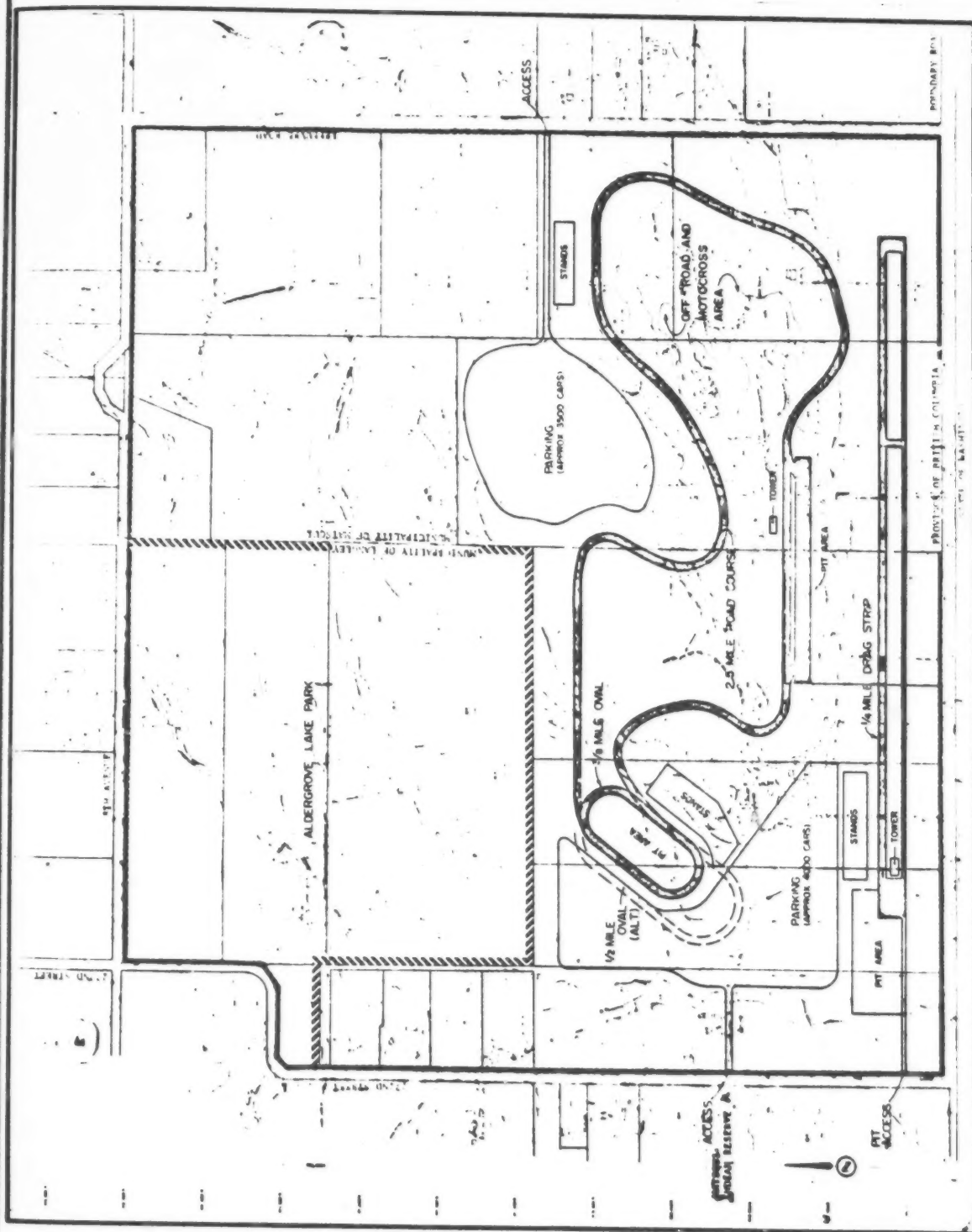
For this physical development option, as with the others, the only practical location for the drag-strip is on the south side of the site, parallel to the international boundary. A number of possibilities exist for the oval track, road course and off-road course configuration and location.

Physical Development Alternative 2

The second physical development concept observes and protects the externally controlled resource extraction rights at the site. It is also developed, however, on the premise that maximum utilization of the centre is encouraged through the segregation of major facilities. This will maximize the flexibility of the operation and allow for independent and coincidental use of motorsport facilities. Alternative 2, therefore, becomes a compaction of the first alternative into a more confined area to ensure longevity of the motorsport centre without the requirement to move major facilities, while the capability of resource extraction is retained.

Exhibit XV, on the following page, graphically portrays one functional layout which takes into account these guidelines. Locating a separate oval track in the southeast corner of the site necessitates excavation which would not otherwise be required. However, it does ensure that flexibility for the motorsport centre is retained by allowing a variety of uses simultaneously while ensuring that the resource extraction area is not associated with any costly development.

Parking areas shown in Exhibit XV are located on suitable land sections remaining, once other major facilities have been placed.



DATE: JUNE 1983 DESIGNED: HES DRAWN: B.V. APPROVED: HES	 NOVACORP CONSULTING INC. Engineering and Planning Consultants	 Purd Crawford & Partners Limited Engineers - Planners - Scientists	LOWER MAINLAND MOTOR SPORT CENTRE PRELIMINARY ASSESSMENT	ALDERGROVE SITE PLAN ALTERNATIVE NO. 3 SCALE 1" = 400' DRAWN BY: 3048P-2 CHECKED BY:
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While 8000 cars can be accommodated at one time in the areas shown, walking distances to the oval track and drag strip are longer than under the two other development options. Parking allocation by facility is as follows:

- Oval track/drag strip: 4500 cars
- Road race course: 3500 cars

It should be noted that parking capacity under this alternative is less than the expected peak demand for vehicle parking. Overflow will occur unless other site areas can be found to accommodate vehicles under these circumstances.

While parking problems will be experienced should two major events be staged at one time, the flexibility of Alternative 2 will permit simultaneous use by clubs or for small events on the road course, the oval track, the drag strip and the four wheel drive/motocross track on the same day. Additionally, the northeast corner of the property could be used for a variety of motorsport and non-motorsport purposes such as campsites or R.V. sites that do not require costly infrastructure.

Physical Development Alternative 3

The third physical development concept for the Aldergrove Lake site was prepared on the premise that facilities involving significant capital costs (eg. paved race courses, bleachers, etc.) should be combined to the extent practical and separated from resource extraction areas not under the direct control of the G.V.R.D. This alternative is shown in Exhibit XVI (following).

Facilities which involve high development costs were purposely treated in a different manner from less capital intensive developments such as an off-road vehicle course and a motocross track. The latter can be more easily relocated, if necessary, in future years. This philosophy of development leads to constraints

concerning area availability since large segments of the property are left alone during the planning of the site.

Under Alternative 3, the oval track and the road course have been combined to capitalize on common requirements while accounting for the fact that most oval track events are carried out at night while road course events are usually daytime activities. The subsurface resource extraction rights owned externally are protected under this scenario, as was not the case under Alternative 1.

The combination of oval track and road course facilities, as shown in Exhibit XVI, is considered to be an operationally practical alternative. Generally, oval track events in the Lower Mainland take place during the evening. Co-existence with road race activity is therefore possible under an appropriate scheduling arrangement. A major event, and perhaps some moderately sized races, at both facilities during the same day/evening period would, however, not be practical. Major oval track races which are carried out as a day-long or weekend event would preclude road course utilization. A solution to this would be the construction of a by-pass (of the oval track area) to provide a shorter road course for local club use, go-kart events or the staging of shorter auto and motorcycle races while the oval track is being utilized.

During the development of Alternative 3, as was the case for Alternative 1, a variety of factors were taken into account to ensure that course configurations and layouts represent realistic options. Nevertheless, the plan shown is intended to be typical only and does not necessarily represent a final recommendation for facility layout.

Parking areas shown in Exhibit XVI represent practical options for spectator vehicles taking into account the objective of minimizing

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Parking areas shown in Exhibit XVI represent practical options for spectator vehicles taking into account the objective of minimizing

overall development costs. Due to land availability constraints, however, total parking capacity has been reduced under this option from 11,000 cars to 7,500 cars. This represents a notable disadvantage for large or simultaneous events. The allocation of parking area capacity under Alternative 3 is as follows:

- Drag-strip/Oval track: 4000 cars
- Road race course: 3500 cars

While the above parking capacity will permit smaller simultaneous events on the drag-strip and road course, a major event at either facility would impact significantly on the capability to stage an event of even moderate size at the other. The location of parking lots indicates that all such space is well situated for road course events.

The drag-strip is shown to be located along the southern boundary of the property under Alternative 3, as was the case under the other two scenarios. That portion of Aldergrove Lake Regional Park which is currently developed for public recreational use is similarly segregated from the motorsport centre under this alternative.

The northeastern section of the property, under this scenario, would not be extensively developed. This will enable sub-surface resource extraction to occur in the future without requiring costly reorientation of facilities. Meanwhile, however, the northeast corner of the site can be used for a variety of activities such as motocross, off- road vehicle events and/or camping that do not require costly infrastructure.

SITE USEABILITY

All three alternatives exhibit the capability of accommodating both the principal facilities and supporting or ancillary facilities required for widespread and extensive motorsport use. Principal facilities are considered to be essential to the motorsport centre. Other facilities include smaller support structures and areas for motorsport activity as well as such developments as campgrounds, R.V. parks and playgrounds. extensive motorsport use. Given the total land area and proposed facilities in all cases, each also has the capability to accommodate a variety of non-motorsport users.

Principal Facilities

The preceding pages have shown that all of the "principal" facilities identified as being required in Chapter 2 have been accommodated under each of the three alternatives. As a result, principal recreational needs of the many motorsport groups located in and around the Lower Mainland of British Columbia can be provided for at this one centralized facility.

It is important to understand, however, that each physical development option is based on a different set of assumptions. The configuration of each is different and the land which remains after the principal facilities have been accommodated varies in area and nature. As a result, the extent to which each alternative can make provision for other facilities should be the subject of further study during the detailed planning stage of the project.

Other Facilities

In terms of other facilities that could be accommodated in a motorsport centre, there are basically two types:

- those requiring small amounts of land; and
- those requiring large land areas.

There is no difference amongst the three alternatives concerning their capability to accommodate the variety of smaller land users expected to be an integral part of the motorsport centre. These small land users are key components of the overall centre and will contribute significantly to its useability and attractiveness. A partial listing of such support services and amenities which should be incorporated into the development is provided below:

- washrooms/shower facilities;
- clubhouse/meeting rooms;
- small/on-site covered and secured storage facilities;
- bicycle paths;
- jogging trails;
- children's recreational areas;
- playing fields;
- interpretive/information buildings;
- ticket and crowd control facilities;
- on-site commercial space for centre users and motorsport oriented businesses;
- fueling/retail areas; and
- picnic areas.

There is a wide variety of other facilities which would require significant portions of land such as campgrounds, recreational vehicle parks, large dry storage areas and passive park areas.

Unfortunately, all of these uses together could not be accommodated under any of the alternatives.

All "other" facilities will increase the overall utilization capability and recreational value of the proposed development. The examples listed are representatives of the many types of amenities and services that will support the recreational function of the motorsport centre. While some may be developed initially, others may be established only once the principal facilities are operational. Nevertheless, each alternative is capable of incorporating other developments which, without a doubt, will enhance the overall appeal of the project to all user and spectator groups.



5. CAPITAL COST ANALYSIS

Capital costs associated with developing the Aldergrove Lake site have been estimated for each of the physical development alternatives. These estimates were prepared within the guidelines demanded by the scope of the project. They reflect preliminary engineering cost estimates for the development described. Land costs are excluded.

COSTING ASSUMPTIONS

A number of basic assumptions were made in order that a reliable set of capital cost estimates could be prepared. These assumptions are listed below.

- For purposes of determining initial levels of capital cost, it was assumed that all contracts would be placed out to open, competitive tendering. Furthermore, full market prices were used for labour, material and equipment. To the extent that "non-market" arrangements can be made to lower overall costs on specific components of the project, total capital expenditure requirements will be reduced accordingly.
- Capital cost estimates were developed on the basis that all moveable and semi-permanent fixtures and equipment would be purchased new at full market prices. To the extent that equipment and fixtures at existing facilities can be utilized, total capital expenditure requirements will be reduced accordingly.

- Capital cost estimates have been developed on the basis of 1983 wage, price and cost levels. It has assumed that all materials and labour will be sourced locally, to the extent practical.

Details of unit prices and assumptions used during the development of the capital cost estimates under each alternative are included in Appendix B.

It is evident, from some of the basic costing assumptions, that total capital cost estimates represent the high end of the range. It is likely that a number of efficiencies and cost savings can be achieved which will lower overall development costs. These, along with other potential cost saving measures, are discussed later in this chapter.

QUALITY OF PRODUCT PROVIDED

During any discussion of capital cost, it is important to understand the nature of the product being developed. Only once the overall capability of the centre to accommodate motorsport activity is known, can the level of capital costs involved be effectively assessed.

A motorsport centre can be developed, in effect, as a "bare bones" facility or as the ultimate complex with all the options. To determine the type of facility which should be evaluated for the Lower Mainland at this preliminary stage of planning, the following factors were considered:

- the needs and requirements concerning motorsport centre facilities as expressed by local user groups;
- the results of research into the demand for motorsport activities by participants and spectators; and

- an understanding of the revenue generating power of motorsport events of varying types and calibre.

It was concluded, for this preliminary analysis, that the proposed motorsport centre should provide for the extensive recreational demands of local motorsport groups and, at the same time, be capable of staging a variety of major international events. Capital costs, therefore, have been estimated in response to physical characteristics which provide this capability.

The proposed motorsport centre, as evaluated, will be of sound quality and design, will include basic facilities to stage major and minor events and will include amenities for recreational and social pursuits by user groups. The alternatives evaluated, however, do not represent the ultimate motorsport centre during initial stages of development. Each development option is capable of evolving into such a complex. However, specific components of development (eg. full parking area pavement; extensive control, timing and VIP facilities; extensive permanent seating capacity) can be expanded or developed more completely over the medium to long term as demand and revenues warrant.

In summary, capital costs account for a sound motorsport centre which is constructed to accommodate both local and regional recreational activities but which, at the same time, is capable of staging major events of international calibre at the described facilities.

PROJECT COST COMPONENTS

The nature of this overall evaluation is preliminary. As such, capital cost analysis centred on the major development compon-

ents associated with the project. Provision was also included for operating equipment such as oval track lighting, starting lights, public address systems and vehicles.

Components of the overall development considered to represent major portions of the capital expenditure required are described briefly in the following paragraphs. Unit prices and their method of application to develop capital costs for each component are detailed in Appendix B.

The road race course cost estimates include provision for site preparation, construction and paving of a track 15 metres wide by four kilometres long. All development characteristics are based on standards accepted and published by the Federation Internationale de l'Automobile (FIA). Capital costs include provision for a 10-metre wide, 230-metre long pit lane as well as 2300 square metres of pit area and 2300 square metres of pit storage area.

Capital costs include four kilometres of guardrail or barrier fence around the course as well as two kilometres of Jersey barrier or concrete wall. Line painting on both sides of the track is also accounted for. Finally, estimates provide for 2300 square metres of pit storage buildings, 50 square metres of control/scoring tower space and bleacher type standards for 9,000 people.

The drag strip will also be constructed to standards which enable the staging of major international events. Capital cost estimates include provision for site preparation, construction and paving of a 15-metre wide, 1200-metre long (3/4 mile) track. Also included is provision for a four metre wide by 1200-metre long return lane, a staging area of some 3600 square metres and a pit area of 18,900 square metres.

Drag strip costs include provisions for a control/scoring tower of some fifty square metres, bleacher type seating for 7,500 people and a permanent concession structure.

The oval track is based on a 3/8th mile design although this could be enlarged to a 1/2 mile facility if required at a later date. Cost estimates include provision for a 600-metre long by 15-metre wide oval circuit, a pit area of 10,800 square metres and bleacher type seating for 4,000 people. Guardrails and fencing are included in the cost estimates, as is a permanent concession area and exterior floodlighting for night-time use.

The off-road course is not likely to be associated with any significant capital costs, since total excavation costs are expected to cover initial development of a suitable track. Furthermore, it is expected that concessions, bleachers and other structures developed for other essential facilities will be located in a manner that they can and will be used for major off-road events as well.

Parking areas are provided based on demand expectations under Alternative 1. Under the other two alternatives, parking areas have been designed on the basis of suitable land available taking into account the constraints of each scenario.

Capital cost estimates for parking lot development make provision for one major paved area for each alternative. It is anticipated that this area would also be used for automobile slalom and skid pad activities. Provision for developing other parking areas as gravelled lots is included.

Excavation represents another basic cost component associated with the proposed development. Each alternative was analyzed to develop estimates of the quantity of earth to be moved in each case. These estimates were translated into total capital costs

associated with excavation for each of the three configurations.

Sound attenuation is expected to be accomplished through berming, fencing and planting. Cost estimates associated with berming are incorporated into excavation cost estimates. Fencing and planting requirements vary by alternative.

While sound attenuation is not expected to represent a huge portion of the overall capital cost of the development, it is an important component of the project. Properly designed attenuation measures can significantly reduce the level of impact on surrounding areas. An analysis of the situation at the Aldergrove Lake site was carried out during this study. The results of this analysis are summarized in Chapter 9 and more specific details are included in Appendix C.

Security fencing was included in the capital cost estimates for each alternative. In all three cases, fencing was provided around the entire motorsport centre. Since the useable area varies amongst the alternatives and since sound attenuation fencing can double as security fencing, costs vary for each option.

The principal components of development described above account for more than 80 percent of total estimated costs. Items considered to be minor, in a relative sense, include the following:

- Utilities
 - including provision for supplying power and telephone services to the site, drilling wells for a fresh water supply and septic tank installation;
- Equipment
 - including the provision of such equipment as starting lights, a public address system, a maintenance vehicle and other operating equipment;

- Contingency - an allowance for unknown costs occurring which are related to parking area development, excavation, sound attenuation and security fence purchase/installation;⁽¹⁾
- Detailed Planning - including socio-economic, financial, marketing, organizational, operational and physical planning work required to ensure that the development is effectively planned and implemented in a manner which will meet the objectives of users and non-users, as well as public and private sector supporters;
- Engineering Fees - for detailed engineering and architectural design work; and
- Construction Management - to ensure that construction quality is maintained and that the development proceeds on a timely basis and within the budget allowed.

CAPITAL COST ESTIMATES

The results of the capital cost analysis undertaken are summarized in Exhibit XVII (following). All costs are based on 1983 wage, price and cost levels.

Exhibit XVII shows that the overall capital costs do not vary substantially amongst the three options. Alternative 3 is the least costly at \$10.1 million, followed closely by Alternative 1 at \$10.9 million, and then by Alternative 2 at about \$12 million.

Despite the small variation in costs, it is evident that cost savings can be achieved depending on the layout and configuration of the site.

(1) Separate contingency provisions are provided for road race course, drag strips and oval track capital costs as detailed in Appendix B.

EXHIBIT XVII
CAPITAL COST SUMMARY

CAPITAL COST ESTIMATES (\$000) (1983)			
COST CATEGORY	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3
● Road Race Course	2,560	2,560	2,420
● Drag Strip	899	899	899
● Oval Track	586	586	497
● Parking:			
- Paved - Lot 1	1,580	2,025	1,814
- Gravel - Lot 2	695	488	488
- Gravel - Lot 3	348	--	--
● Excavation	1,020	2,040	1,020
● Sound Attenuation:			
- Fence	66	55	114
- Planting	30	15	50
● Security Fencing	154	125	70
● Contingency (at 15%)	1,191	1,319	1,106
Sub-total	9,129	10,112	8,478
● Utilities	130	130	130
● Equipment	100	100	100
Sub-total	9,459	10,342	8,708
● Detailed Planning	200	200	200
● Engineering Fees (@ 9%)	842	931	783
● Construction Management (@ 5%)	468	517	435
TOTAL	10,869	11,990	10,126

Provision is made in the capital cost estimates for all essential physical facilities at the motorsport centre. Besides permitting regular events, the centre would be capable of staging major international motorsport events without additional capital investment. The desirable "frills" mentioned on page 4.10 are not included in the capital cost estimates.

It would also provide areas and facilities which cater to the social and recreational interests of those involved in motorsport and a variety of demands from non-motorsport organizations.

It should be noted that these capital costs exclude all "soft" development costs connected with the proposed motorsport centre such as legal fees, interest costs during construction and costs associated with long-term financing. Furthermore, capital costs estimates exclude non-essential but potentially desirable facilities such as those described on pages 4.10 and 4.11. "Other" facilities which are large land users, such as campgrounds and R.V. parks, offer revenue generating potential and, therefore, need to be evaluated relative to their incremental capital costs once the principal facilities are either established or under construction.

Exhibit XVII excludes off-site costs associated with the motorsport centre although these are expected to be limited. Water supply and waste disposal capability will be provided on-site. Telephone and hydro connections will be required but represent a minimal cost in relative terms. Some area road improvement and upgrading will, however, be required to accommodate traffic generated by major events. Costs associated with this upgrading will extend to road signage and, possibly, traffic lights. The extent to which off-site road upgrading will be required, the extent to which this extends beyond existing local, regional and provincial

plans, and the incremental motorsport centre capital costs so generated should be the subject of further investigation.

Finally, all land costs have been excluded from the capital cost summary.

CAPITAL COST REDUCTION

Due to the limited availability of financial resources through both the public and the private sectors, it is important to understand the extent to which a motorsport centre can be developed at a lower capital cost than is indicated in Exhibit XVII. A number of areas of potential capital cost saving are identified in the following paragraphs. These areas represent options and efficiencies which do not impact on the overall capability of the centre to fulfill the roles described earlier or its overall quality.

Use of existing equipment and materials at other motorsport facilities could lead to savings in purchase and installation costs. Currently, such items as starting lights, public address systems, emergency equipment, external lighting for oval track racing and vehicles are being used at existing facilities. The potential capital cost savings associated with this cost component are as follows:

● Oval track lighting	- \$ 80,000
● <u>Miscellaneous equipment</u>	- <u>\$ 50,000</u>
● <u>TOTAL</u>	<u>\$130,000</u>

Parking lot development could be undertaken in a slightly different manner which would lessen the quality of the parking surface but not impact on the capability of the centre to stage major events. One quarter of the paved parking area, under each alter-

native, would be sufficient to stage slalom events and to carry out skid school and driver training activities. Under the assumptions that the remaining area in the "paved lot" is provided with a gravel surface, and that remaining parking lots are developed as level, grassed areas, the following capital cost savings would be realized:

<u>Alternative 1</u>	<u>Alternative 2</u>	<u>Alternative 3</u>
\$1,984,000	\$1,536,000	\$1,428,000

These are significant cost savings. The parking requirements should be examined carefully, along with the capability of each parking area should it remain as a grassed lot only.

Preferential contract rates may be realized during segments of the construction process. A vast number of individuals are involved directly and continuously in motorsport activity on the Lower Mainland. It is probable that preferential rates could be realized for some of the work required through the connections of those involved. Cost estimates provided earlier were developed on the basis of full market rates. Should, for example, 15 percent of excavation costs could be saved in this manner, the following capital cost savings would be realized:

<u>Alternative 1</u>	<u>Alternative 2</u>	<u>Alternative 3</u>
\$150,000	\$150,000	\$300,000

Excavation is used as an example only, which could be realistic if individuals or firms interested in motorsport centre development would be willing to provide services at lower than market costs during off-peak periods. Savings could be increased should advantage be taken of federal/provincial initiatives in the area of job creation and manpower incentive programs.

Volunteer expertise and labour may represent another area of substantial cost savings. During the research process, it became evident that the hundreds of groups and thousands of individuals interested in motorsport centre development have many skills and expertise to offer. It also became evident that most would be willing to volunteer time and effort to the development of a suitable facility. With some organization and planning, many of the jobs could be broken down into components and designated to specific groups with the required capability and expertise. While many jobs will need to be undertaken by qualified professionals and construction trades, volunteer efforts could lead to substantial capital cost savings during the development process.

A capital cost savings summary is provided below based on identified savings areas and the estimates made. These savings are subtracted from original capital cost estimates to indicate a revised level of investment associated with each alternative.

	<u>Alternative 1</u>	<u>Alternative 2</u>	<u>Alternative 3</u>
<u>Capital Cost Estimate</u>	<u>\$10,869,000</u>	<u>\$11,990,000</u>	<u>\$10,126,000</u>
<u>Possible Savings:</u>			
● Equipment	130,000	130,000	130,000
● Parking	1,984,000	1,536,000	1,428,000
● Contracts	150,000	150,000	300,000
● Volunteers	unknown	unknown	unknown
<u>Revised Capital Costs</u>	<u>\$ 8,605,000</u>	<u>\$10,174,000</u>	<u>\$ 8,268,000</u>

It is noteworthy that the cost reduction associated with Alternative 1 is some 22 percent which is due primarily to the parking cost levels in the original estimate. Revised estimates for Alternative 2 and Alternative 3 represent cost savings of

about 16 percent and 19 percent respectively over the original estimates.

It is evident that capital cost savings may be achieved in a number of areas. The next stage of the planning process should include a more careful examination of capital costs. Research into methods by which these costs could be reduced without affecting the nature of the project itself is worthwhile.



6. OPERATIONAL PROFILE

An operational evaluation of the proposed motorsport centre was carried out to identify facility utilization which can realistically be accomplished during a typical year.

The scope of this operational assessment is similar to that of the physical concept analysis. Its orientation, once all results are known, is to provide useful input into an overall assessment of motorsport centre viability.

OPERATIONAL ASSUMPTIONS

It is important that the operational evaluation take into account all principal activities and events at the proposed centre that can be reasonably predicted. At this preliminary stage of evaluation, operations likely to have a minor financial impact on the status of the centre were not evaluated in detail. These, however, have been described to permit the reader an appreciation of the magnitude of operational use of the centre.

This study is concerned directly with the potential viability of a motorsport centre. While a wide variety of public recreational interests will be served by the proposed development, a number of non-motorsport activities will also likely be encouraged to locate at the centre. This will increase its overall utilization and financial viability. In addition, a variety of associated enter-

prises will likely spring up on and around the motorsport site. These operations would cater to the activities at the centre and contribute economically to local municipalities. While their direct financial contribution to the cost/revenue statement of the motorsport centre will be minimal, their contribution to the development's vitality and the local socio-economic base will be considerable.

These types of motorsport centre operations can be categorized as follows:

- principal motorsport operations;
- minor (... from the financial point-of-view ...) motorsport operations;
- non-motorsport users of the centre's facilities; and
- spin-off commercial activities on and off the site.

This is not a project with limited appeal. It can be expected to accommodate the recreational, social and commercial needs of many Lower Mainland residents and organizations. All four categories are important to an understanding of the extent to which such a development is in demand and the extent to which it can be expected to be utilized.

From the financial perspective, "principal motorsport users" and "non-motorsport users of the centre's facilities" are the two groups expected to exhibit major revenue generating potential. The first is treated in some detail in the following pages. Non-motorsport users are discussed, along with their likely contribution to the overall financial success of the project, but detailed analysis of their commercial impact can only be carried out during the detailed planning stage of the project once more

research in the area of demand assessment, economic impact and cost-benefit analysis has been undertaken.

"Minor motorsport operations" are discussed briefly but are not expected to alter the financial profile of the project. Nevertheless, the importance of the centre itself in meeting the extensive recreational needs of smaller interest groups in the Lower Mainland is one of its greatest attributes.

"Spin-off activities" on and off the site will represent a substantial benefit to the municipalities and the region in which the development is located. Again, the direct contribution of this type of user group to the financial profile of the operation is expected to be minor. However, its overall economic impact and indirect effect on the attractiveness of the centre itself will be considerable.

PRINCIPAL MOTORSPORT OPERATIONS

The following list summarizes those types of activities at the proposed centre which are considered to be principal operations for purposes of this operational assessment and the subsequent financial analysis:

- Road race course - The road course, for purposes of this operational analysis, is assumed to serve for the staging of local, regional and national/international events for stock and race-prepared cars, motorcycles, go-carts and the like.
- Oval track - The oval track (shown as 3/8 mile in length but expandable to 1/2 mile), is assumed to serve for the staging of local, regional and national/international events.

- Drag strip - The drag strip (shown as 1/4 mile track plus a 1/2 mile run-off area) is assumed to serve for the staging of all types of drag races, including motorcycles, at the local, regional and national/international level.
- Off-road course - The off-road course would be developed in a manner suitable for both motocross and four wheel drive users. Events staged during the early years of development are assumed to be limited to the local and regional level.

Operational Needs Accommodated

Motorsport centre facilities, as described in this report, have been planned to provide maximum availability to a maximum number of user groups and to ensure maximum utilization. Achievement of these goals for the principal motorsport operations depends on three basic parameters:

- facility layout and functionality;
- operational scheduling; and
- user group co-operation.

Facility layout and functionality were discussed earlier in the report. Operational scheduling and user group co-operation depend, to a significant extent, on management of the overall motorsport centre which is discussed later in the report.

The extent to which the centre can accommodate small and medium sized user groups must, by necessity, take into account commercial realities. While many are likely to feel that the smaller groups should have continuous access to the facilities at minimum cost, it is clear that capital and operating costs must be covered.

The premise has been used, during this study, that an effective blend of small user groups and events, moderately-sized events and large-scale events is required. Physical facilities have been planned with this in mind. Large events draw crowds, bring in much needed revenue and increase the exposure and reputation of the motorsport centre. Small events and user groups, however, must make substantial use of the facilities in order for the needs of the many participants in these sports to be met. An operating plan has been developed to ensure that the many requirements of small user groups can be accommodated.

Operational Profiles

User group needs were evaluated during the course of the study and are summarized in Chapter 2. Historical participation in, and attendance at, motorsport events in the U.S. Pacific Northwest and Western Canada was reviewed in order to develop realistic attendance estimates for the future. These investigations led to the development of a hypothetical operating schedule for the proposed motorsport centre. A schedule was developed for each physical development alternative since each has varying operational implications due to facility sharing and capacities.

Each schedule takes into account facility demand, available weekend and holiday periods, as well as scheduling requirements for major events at different facilities. Although motorsport facilities are expected to be used on a year round basis, scheduling of principal motorsport operations was estimated for the highest demand period of March 1 through October 31.

A total of 35 weekends are available over this period. While some principal activities will take place during the week, the total number of weekends was used as a capacity guideline. Much more use of the facilities will occur than is shown on the schedules

themselves since small user groups will schedule activities during the week. However, this section concerns only those principal motorsport operations which generate revenue for the centre.

The frequency of events, as described in the operational profile for each alternative, has been developed on the basis that only weekend or holiday events during the racing season, will generate a positive cash flow for the centre. It has been assumed that use of the facilities for principal motorsport operations during the week and off-season will be carried out on a breakeven basis. Users during these times are expected to represent smaller groups as well as participants in professional events who are practising during the off-peak period. In both cases, charges sufficient to cover incremental costs for facility use would likely be imposed.

The operational profiles developed take into account the expected growing popularity of the principal motorsport facilities as events are held and promotion takes place. Increasing popularity is realized through both participant and spectator involvement in the sport.

Finally, it has been assumed that no events are cancelled due to weather. While it is likely that a number of races will be cancelled or postponed during the year due to weather, most major events will proceed in any case. To the extent that local events are cancelled, the resultant financial impact is not expected to be significant.

The operational profile for Alternative 1 is unconstrained due to the physical development philosophy associated with this option as described in Chapter 4. A preliminary operational profile which summarizes both the frequency of events and expected attendance at these events under this scenario is included in Exhibit XVIII

EXHIBIT XVIII

LOWER MAINLAND MOTORSPORT CENTRE PRELIMINARY ASSESSMENT

OPERATIONAL PROFILE - ALTERNATIVE 1

FACILITY	TYPE OF EVENT	F R E Q U E N C Y					AVERAGE ATTENDANCE PER EVENT (3)				
		YR1	YR2	YR3	YR4	YR5	YR1	YR2	YR3	YR4	YR5
● <u>Road Course</u>	● Major Nat'l/Int'l (1) ● Regional (1) ● Local/Club	1 10 18	2 9 18	2 10 18	3 9 18	3 10 18	15,000 3,000 300	12,000 2,500 300	14,000 3,000 300	15,000 3,000 300	16,000 3,000 300
● <u>Oval Track</u>	● Major Nat'l/Int'l (1)(2) ● Regional ● Local/Club	2 12 1	2 14 2	3 16 2	3 18 2	3 20 2	3,500 1,500 200	4,000 2,000 200	4,500 2,500 200	4,500 3,000 200	4,500 3,000 200
● <u>Drag Strip</u>	● Major Nat'l/Int'l (1) ● Regional (1) ● Local/Club	- 1 6	- 3 7	1 5 8	2 6 8	2 6 9	- 4,000 300	- 5,000 300	10,000 5,000 300	10,000 6,000 300	10,000 6,000 300
● <u>Off-Road Course</u>	● Major Nat'l/Int'l (1) ● Regional ● Local/Club	- 1 10	- 1 10	- 2 10	1 3 10	1 4 10	- 1,500 600	- 1,200 800	- 1,500 800	5,000 1,800 1,000	8,000 2,000 1,000

(1) Event carries through a full weekend.

(2) Event could require a 1/2 mile track.

(3) All attendance estimates assume an appropriate level and type of event promotion.

(opposite). Estimated utilization is provided for each of the first five years of operation.

The total number of events associated with principal motorsport operations on weekends is shown to increase from 62 during the first year to 88 in the fifth year. This compares to an annual total at the Portland International Raceway of 128 during the entire 1981/1982 season including weekday events. It needs to be remembered that the total number of events at the proposed centre will be significantly higher and that the numbers shown represent only "principal motorsport operations" which occur on weekends.

Total attendance by facility type and by year, based on the estimates of Exhibit XVIII, are summarized below:

	<u>Total Annual Attendance at Principal Events</u>				
	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
● Road Course	50,400	51,900	63,400	77,400	83,400
● Oval Track	25,200	36,400	53,900	67,900	73,900
● Drag Strip	5,800	17,100	37,400	58,400	58,700
● Off-Road Course	<u>7,500</u>	<u>9,200</u>	<u>11,000</u>	<u>20,400</u>	<u>26,000</u>
<u>TOTAL - ALT. 1</u>	<u>88,900</u>	<u>114,600</u>	<u>165,700</u>	<u>224,100</u>	<u>242,000</u>

Despite the magnitude of these attendance levels, it is important to remember that they reflect only principal motorsport activities carried out on weekends and holidays from March 1 through October 31 which attract spectators. The facilities themselves will be used much more frequently than this since motorsport and non-motorsport groups and organizations will utilize various parts of the centre during weekdays and off-season as well. For comparative purposes, the total attendance at all motorsport events at Portland International Raceway (P.I.R.) during the 1981/1982 season was about 104,000. It should be kept in mind that P.I.R. does not stage oval track events.

EXHIBIT XIX

LOWER MAINLAND MOTORSPORT CENTRE PRELIMINARY ASSESSMENT

OPERATIONAL PROFILE - ALTERNATIVE 2

FACILITY	TYPE OF EVENT	F R E Q U E N C Y					AVERAGE ATTENDANCE PER EVENT (3)				
		YR1	YR2	YR3	YR4	YR5	YR1	YR2	YR3	YR4	YR5
● <u>Road Course</u>	● Major Nat'l/Int'l (1) ● Regional (1) ● Local/Club	1 10 18	2 9 18	2 10 18	3 9 18	3 10 18	13,000 3,000 300	11,000 2,500 300	13,000 3,000 300	14,000 3,000 300	15,000 3,000 300
● <u>Oval Track</u>	● Major Nat'l/Int'l (1)(2) ● Regional ● Local/Club	2 12 1	2 14 2	3 16 2	3 18 2	3 20 2	3,500 1,500 200	4,000 2,000 200	4,500 2,500 200	4,500 3,000 200	4,500 3,000 200
● <u>Drag Strip</u>	● Major Nat'l/Int'l (1) ● Regional (1) ● Local/Club	- 1 6	- 3 7	1 5 8	2 6 8	2 6 9	- 4,000 300	- 5,000 300	9,000 5,000 300	9,500 6,000 300	9,500 6,000 300
● <u>Off-Road Course</u>	● Major Nat'l/Int'l (1) ● Regional ● Local/Club	- 1 10	- 1 10	- 2 10	1 3 10	1 4 10	- 1,500 600	- 1,200 800	- 1,500 800	5,000 1,800 1,000	8,000 2,000 1,000

(1) Event carries through a full weekend.

(2) Event could require a 1/2 mile track.

(3) All attendance estimates assume an appropriate level and type of event promotion.

Exhibit XVIII, and the above attendance estimates, demonstrate the proportionately heavy use of the road course in the early years of operation. It is notable, however, that significant recovery and growth in drag racing is expected as facilities become available and effective promotion takes place. Similarly, substantial growth in both the number of off-road events and their audience is anticipated.

In summary, growth in motorsport activity is expected to occur once the centre is open. Initial spectator response at major events is expected to be good. While this response can be expected to taper off in some cases during the second year of operation, overall growth in utilization and attendance at all principal facilities is projected to take place during the first five years.

The operational profile for Alternative 2 was developed on the basis of physical development characteristics described in Chapter 4. This alternative includes separation of the principal facilities to allow for the independent operation of each. However, some land availability constraints do exist which restrict the amount of parking space readily available. As a result, while a similar number of events can be expected under Alternative 2 and Alternative 1, attendance projections for the former are marginally lower.

An operational profile for this scenario is included as Exhibit XIX (opposite). The table summarizes both the frequency of events and expected attendance at these events under Alternative 2. Estimated utilization is provided for each of the first five years of operation.

EXHIBIT XX

LOWER MAINLAND MOTORSPORT CENTRE
PRELIMINARY ASSESSMENT

OPERATIONAL PROFILE - ALTERNATIVE 3

FACILITY	TYPE OF EVENT	F R E Q U E N C Y					AVERAGE ATTENDANCE PER EVENT (3)				
		YR1	YR2	YR3	YR4	YR5	YR1	YR2	YR3	YR4	YR5
● <u>Road Course</u>	● Major Nat'l/Int'l (1)	1	2	2	3	3	12,000	10,000	12,000	13,000	14,000
	● Regional (1)	8	8	9	9	9	3,000	2,500	3,000	3,000	3,000
	● Local/Club	16	16	16	16	16	300	300	300	300	300
● <u>Oval Track</u>	● Major Nat'l/Int'l (1)(2)	2	2	3	3	3	3,500	4,000	4,500	4,500	4,500
	● Regional	10	12	14	15	15	1,500	2,000	2,500	3,000	3,000
	● Local/Club	1	2	2	2	2	200	200	200	200	200
● <u>Drag Strip</u>	● Major Nat'l/Int'l (1)	-	-	1	2	2	-	-	8,000	9,000	9,000
	● Regional (1)	1	3	4	5	5	4,000	5,000	5,000	6,000	6,000
	● Local/Club	6	7	8	8	9	300	300	300	300	300
● <u>Off-Road Course</u>	● Major Nat'l/Int'l (1)	-	-	-	1	1	-	-	-	5,000	8,000
	● Regional	1	1	2	3	4	1,500	1,200	1,500	1,800	2,000
	● Local/Club	10	10	10	10	10	600	800	800	1,000	1,000

(1) Event carries through a full weekend.

(2) Event could require a 1/2 mile track.

(3) All attendance estimates assume an appropriate level and type of event promotion.

Total attendance by facility type and by year, based on the estimates of Exhibit XIX, is summarized below:

	<u>Total Annual Attendance at Principal Events</u>				
	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
● Road Course	48,400	49,900	61,400	74,400	80,400
● Oval Track	25,200	36,400	53,900	67,900	73,900
● Drag Strip	5,800	17,100	36,400	57,400	57,700
● Off-Road Course	7,500	9,200	11,000	20,400	26,000
<u>TOTAL - ALT. 2</u>	<u>86,900</u>	<u>112,600</u>	<u>162,700</u>	<u>220,100</u>	<u>238,000</u>

The operational profile for Alternative 3 was also developed on the basis of physical characteristics described in Chapter 4. The characteristics reflect a shared oval track/road course facility and reduced parking capacity. As a result, it is expected that principal facilities will be more constrained operationally, relative to Alternative 1 and Alternative 2, and that somewhat lower participation and attendance levels will occur.

An operational profile, which summarizes both the frequency of events and expected attendance at these events under this scenario, is included in Exhibit XX (opposite). Estimated utilization is provided for each of the first five years of operation.

Total attendance by facility type and by year, based on the estimates of Exhibit XX, is summarized below:

Total Annual Attendance at Principal Events

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
● Road Course	40,800	44,800	55,800	70,800	73,800
● Oval Track	22,200	32,400	48,900	58,900	58,900
● Drag Strip	5,800	17,100	30,400	50,400	50,700
● Off-Road Course	7,500	9,200	11,000	20,400	26,000
<u>TOTAL - ALT. 3</u>	<u>76,300</u>	<u>103,500</u>	<u>146,100</u>	<u>200,500</u>	<u>209,400</u>

Again, it is important to realize that these attendance estimates reflect only a portion, although a major portion, of overall motorsport centre utilization.

The estimates in Exhibit XX, and the above attendance projections, reflect growth characteristics by facility which are similar to those for the other options. Under this scenario, however, attendance at major events is expected to be nominally lower than the first alternative due primarily to parking restrictions. Event scheduling will be a more complicated process under Alternative 3 due to the sharing of facilities. Nevertheless, only a minor impact is expected on the number of local and regional events, while major national/international events are shown to occur in any case.

MINOR MOTORSPORT OPERATIONS

The preceding operational profiles, as mentioned previously, account for a large portion of the activity expected to be carried out at the proposed motorsport centre. Nevertheless, many smaller events and activities will be undertaken by motorsport groups over the course of the year. For this evaluation, the type

of activity represented by these groups is termed "minor motorsport operations".

Minor motorsport operations will represent a significant contribution to the overall utilization of the proposed motorsport centre. In terms of financial impact, however, these activities are expected to be of minor consequence. User charges are expected to be levied on a basis that allows for recovery of incremental costs incurred.

Reference at this point to Chapter 2 will provide the reader with a better idea of the many social and recreational activities associated with motorsport groups which can be expected to take place at the proposed centre. Many groups will make use of race tracks for driver training, practising and small club events. Substantial use of facilities is also expected for non-competitive activities such as auto displays, "show-and-shine" events, concours activities, swap meets, picnics and other recreational and social functions. Many of these activities will take place during the weekends when events described under "principal motorsport operations" are being carried out. It is anticipated that segregation of a number of functional areas and effectively planned control points and access roads will enable this to occur.

In summary, minor motorsport operations are considered to be "minor" only to the extent that they are not expected to represent either a major revenue generator or a major operating cost item. In fact, these operations will account for substantial utilization of the motorsport centre and will be a valuable measure of the extent to which existing and future social and recreational demands on the Lower Mainland are being accommodated.

NON-MOTORSPORT USERS

The proposed motorsport centre is being evaluated relative to the needs of many individuals and organizations involved directly or indirectly with motorsport activities on the Lower Mainland. However, the centre would be utilized by non-motorsport groups and organizations as well. In fact, the type of facilities envisaged are required by different commercial, non-profit and public sector organizations in the Lower Mainland area.

Non-motorsport type use of the proposed centre is expected to be a significant contributor to the overall viability of the project. Not only can many of these activities be programmed during non-peak periods, but many can also be carried out on a year-round basis.

Several types of non-motorsport uses of the facilities which are likely to occur, should this project be implemented, are as follows:

- police and emergency vehicle driver training;
- high speed driver training and testing;
- off-road safety training;
- vehicle performance and economy testing;
- truck/semi-trailer driver training;
- heavy equipment operator training;
- ultralight aircraft operations;
- music festivals/concerts;
- television commercial and movie filming;
- rental garage areas;
- light industry operations;
- development of prototype automobiles;
- new product experimentation;
- boat or vehicle storage;

- BMX activities;
- soap box racing;
- cycling activities and events;
- meetings and assemblies;
- commercial camping and recreational vehicle facility rental; and
- tourism attractions (eg. museum, antique car display, water slide, miniature golf, etc.).

The above list is by no means exhaustive. The size of the area required for a motorsport centre provides ample opportunity to develop facilities and areas for a variety of other uses. Most, if not all, non-motorsport activities for which the site can and will be used should be required to pay for this use. It is expected that this category of user will provide a substantial level of revenue to the motorsport centre. It is also possible that those organizations or companies which expect to make constant and ongoing use of the site may contribute to the overall capital costs of the project.

SPIN-OFF COMMERCIAL ACTIVITIES

Specific uses of the proposed motorsport centre have been identified. It is evident that a wide variety of recreational, social and commercial interests can be accommodated should this development take place.

Due to the level of utilization and activity anticipated for the site, a variety of spin-off commercial activities can be expected. While the extent of these activities is difficult to estimate at this stage, it is, nevertheless, certain that they will occur and that they will represent economic benefits to the area and sub-region. Some spin-off commercial operations can be expected to

locate on the motorsport centre site itself, while others will locate in the surrounding commercial areas.

The following list identifies a number of commercial operations which can be expected to locate in the area, or experience expanded levels of business, should the development of a motorsport centre proceed as described:

- campgrounds/recreational vehicle parks;
- hotels/motels;
- restaurants;
- commercial recreational activity (eg. golf courses, water-slide, Malibu Grand Prix, go-kart track, etc.);
- race car manufacturers;
- performance engine tuning;
- automotive supply;
- automotive testing and maintenance;
- local transportation companies;
- local contractors and construction supply companies; and
- tourist attractions.

Again, the above list is not exhaustive. However, experience with motorsport centre development in other areas such as Portland, Oregon indicates that substantial spin-off activity in the areas identified will occur.



7. OPERATING REVENUES AND COSTS

Capital costs were discussed in Chapter 5. This chapter sets forth the assumptions used and the results achieved during an analysis of potential operating revenues and costs for the proposed motorsport centre.

As was the case for the development of capital cost estimates, work concerning operational revenues and costs is preliminary in nature. The largest revenue and cost components are focused on so that an overall understanding of the financial stature of the centre is obtained.

EVALUATION ASSUMPTIONS

A number of operating assumptions were made which directly affect the financial situation of the motorsport centre. These assumptions are based, in part, on the operational analysis described earlier and, in part, on a basic objective that the centre should be operationally self-sufficient. They are summarized below:

- The owner/operator of the motorsport centre will become involved in the promotion and staging of specific motorsport events. The owner's role is neither limited to one of a landlord, nor expanded to one of total involvement in all activities. It is one which strikes a balance with selective involvement in areas of primary importance to the financial livelihood of the centre.

- Concession operation is contracted out. However, the revenue and profit potential of concession areas is retained by the motorsport centre which effectively manages the concession business.
- Week-day rental of facilities for minor motorsport groups is undertaken in a manner which will ensure that revenues at least cover the incremental costs incurred.⁽¹⁾
- Major events will be organized and promoted primarily by an appropriate professional organization. However, management of the facility will participate in this process as well to ensure that the centre's objectives are maintained and that revenue generating opportunities are capitalized on.
- Revenue generated to the motorsport centre from gate receipts at international, national and regional events is net of all costs incurred. All miscellaneous costs incurred during the event itself (eg. recruiting scorers, emergency workers, ticket takers, etc.) are assumed to be handled by and paid for by the organizing body.

All operating revenue and cost estimates have been developed on the basis of 1983 wage, price and cost levels.

OPERATING REVENUE

It is expected that the proposed motorsport centre will experience three major sources of revenue as follows:

- Principal Motorsport Operations - Gate Receipts;
- Principal Motorsport Operations - Concession Revenue; and
- Non-motorsport Users.

The methodology used in developing revenue estimates for each of these categories, and the results of the analysis, are described

(1) Users of the facility which are not directly connected with motorsport activity (ie. emergency vehicle driver training, public driver safety, concerts, etc.) would be charged on a basis which would generate a profit.

in the following paragraphs. Five year projections are included for Alternative 1, whereas projections are provided for all three development alternatives during the first year of operation.

Motorsport Operations - Gate Receipts

A rate structure for the motorsport centre was developed for use in this evaluation. It takes into account expected demand for motorsport facilities and rates currently charged by existing facilities in the Lower Mainland area and in the United States. The rates themselves were also increased over time as it is expected that the facilities and the events held will be able to demand higher prices as the reputation and stature of the motorsport centre increases.

The following table lists the rates used in this analysis.

TYPE OF EVENT	AVERAGE ENTRY FEE				
	(Per Person Per Day in 1983 \$)				
	Year 1	Year 2	Year 3	Year 4	Year 5
<u>Road Course</u>					
• Nat'l/Int'l	10.	11.	12.	12.	12.
• Regional	8.	9.	9.	10.	10.
• Local	5.	6.	6.	6.	6.
<u>Oval Track</u>					
• Nat'l/Int'l	9.	10.	11.	12.	12.
• Regional	6.	7.	7.	7.	7.
• Local	5.	5.	5.	5.	5.
<u>Drag Strip</u>					
• Nat'l/Int'l	N/A	N/A	10.	11.	12.
• Regional	5.	6.	7.	8.	9.
• Local	4.	5.	5.	5.	5.
<u>Off-Road Course</u>					
• Nat'l/Int'l	N/A	N/A	N/A	10.	10.
• Regional	5.	6.	6.	6.	6.
• Local	4.	5.	5.	5.	5.

The average spectator entrance rate achieved at Portland International Raceway for the entire 1981/1982 year was \$6.61 U.S. (... at 1982 dollar levels ...). Gate charges at Action Raceway during the 1982 season varied from \$5.00 to \$8.00 for adults. Similar gate charges at Westwood Racetrack varied from \$5.00 to \$10.00.

In light of rates being charged elsewhere, those described in the above table are expected to be realistic. While variations may occur for specific types of events, overall revenue estimates derived from this rate structure should prove to be reliable.

EXHIBIT XXI
LOWER MAINLAND MOTORSPORT CENTRE
PRELIMINARY ASSESSMENT

GATE RECEIPT REVENUE ESTIMATES
ALTERNATIVE 1

	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
● <u>ROAD COURSE</u>					
● Major Nat'l/Int'l	\$ 60,000	\$105,600	\$134,400	\$216,000	\$230,400
● Regional	72,000	60,750	81,000	81,000	90,000
● Local/Club	5,400	5,400	5,400	5,400	5,400
● <u>Sub-Total</u>	<u>\$137,400</u>	<u>\$171,750</u>	<u>\$220,800</u>	<u>\$302,400</u>	<u>\$325,800</u>
● <u>OVAL TRACK</u>					
● Major Nat'l/Int'l	\$ 18,900	\$ 24,000	\$ 59,400	\$ 64,800	\$ 64,800
● Regional	16,200	29,400	52,000	56,700	63,000
● Local/Club	300	600	600	600	600
● <u>Sub-Total</u>	<u>\$ 35,400</u>	<u>\$ 54,000</u>	<u>\$102,000</u>	<u>\$122,100</u>	<u>\$128,400</u>
● <u>DRAG STRIP</u>					
● Major Nat'l/Int'l	\$ -	\$ -	\$ 40,000	\$ 88,000	\$ 96,000
● Regional	6,000	27,000	52,500	86,400	97,200
● Local/Club	1,800	2,100	2,400	2,400	2,700
● <u>Sub-Total</u>	<u>\$ 7,800</u>	<u>\$ 29,100</u>	<u>\$ 94,900</u>	<u>\$176,800</u>	<u>\$195,900</u>
● <u>OFF-ROAD COURSE</u>					
● Major Nat'l/Int'l	\$ -	\$ -	\$ -	\$ 20,000	\$ 32,000
● Regional	1,125	1,080	2,700	4,860	7,200
● Local/Club	3,000	3,000	3,000	3,000	3,000
● <u>Sub-Total</u>	<u>\$ 4,125</u>	<u>\$ 4,080</u>	<u>\$ 5,700</u>	<u>\$ 27,860</u>	<u>\$ 42,200</u>
● <u>TOTAL</u>	<u>\$184,725</u>	<u>\$258,930</u>	<u>\$423,400</u>	<u>\$629,160</u>	<u>\$692,300</u>

Attendance estimates described in Chapter 6 were combined with the estimated rate structure to obtain gross revenue from gate receipts. This was carried out for each of the first five years of operation.

Gate receipts are assumed to accrue to the motorsport centre based on the following allocation of gross gate revenue:

- National/International Event - 20% of the gross;
- Regional Event - 15% of the gross; and
- Local/Club Event - \$300 per day.

This is an estimated allocation of gate revenue based on levels of revenue achieved at other motorsport centres and the anticipated role and responsibilities expected to be undertaken by the centre's organization itself. Although Portland International Raceway operates under a slightly different set of guidelines (ie. the facility management serves solely as a landlord) than is proposed for the Lower Mainland Centre, the portion of total gate receipts which accrued to that facility during the 1981/1982 fiscal year was 8.6 percent. This was up slightly from 8.3 percent a year earlier. Charge-out rates for specific events at the Portland facility have been arranged on the basis of ten percent of the gross gate receipts subject to a pre-arranged maximum amount.

Based on available information, and the expectation that the management of the proposed Lower Mainland motorsport centre would become more heavily involved in event promotion and staging, the assumptions stated are felt to be realistic.

Exhibit XXI (opposite) summarizes the gate revenue generating potential of the motorsport centre over the first five years of

operation. A substantial growth rate in total revenue is shown in the exhibit, averaging 39 percent per annum from the first year of operation through to the fifth year of operation. This growth is in constant 1983 dollars and, therefore, represents a substantial real growth in cash inflow to the centre. Increasing levels of revenue are accounted for by more events, greater numbers of spectators per event and increasing rates for entry to the events.

It is notable that large differences in the growth of gate revenue by major facility are anticipated. Average growth rates over the first five years of operation are summarized below by facility.

<u>GATE REVENUE</u>	
<u>Average Annual</u>	
<u>Compounded Rate of Growth</u>	
<u>Year 1 through Year 5</u>	
• Road Course	24.1%
• Oval Track	38.0%
• Drag Strip	123.9%
• <u>Off-Road Course</u>	<u>259.9%</u>
• <u>All Facilities</u>	<u>39.1%</u>

The extraordinarily high gate revenue growth rates associated with the drag strip and the off-road course result from the relatively low level of activity expected at each facility during the first year of operation of the motorsport centre.

Motorsport Operations - Concession Revenue

The second important source of revenue for the proposed motorsport centre is expected to be concession revenue. Involvement in

concession management and operation by the owner/operator of the centre is recommended due to the revenue generating potential of this functional component of the overall project. Other motorsport centres, as well as sport centres of various kinds, have found concession operations to be a valuable source of income. At Portland International Raceway, for example, concession revenue represented 46 percent of total revenue during the 1981/1982 fiscal year. This ratio was 49 percent one year earlier.

Due to the nature of the events expected to be held at the proposed centre, and the availability of concessions at each principal facility, concession revenue contribution from each is expected to be different. The best available information concerning concession revenue at motorsport events was obtained from Portland International Raceway. Based on this data, the following contributions were developed for use in this analysis:

<u>DAILY CONCESSION REVENUE (1983 \$)</u>		
<u>TYPE OF EVENT</u>	<u>Gross Expenditure per Capita</u>	<u>Per Capita Contribution to Motorsport Centre</u>
● Road Course Events	\$ 2.30	\$ 0.87
● Oval Track Events	\$ 2.75	\$ 1.05
● Drag Strip Events	\$ 2.30	\$ 0.87
● Off-Road Course Events	\$ 1.80	\$ 0.68

Average gross concession expenditures per capita during the 1981/1982 fiscal year at Portland International Raceway were \$1.70 U.S. That level was actually down from \$1.98 U.S./capita a year earlier, likely reflecting the recession which was especially severe in the Portland area.

Variations in expenditure levels by type of event are considered realistic in light of information available from other facilities

EXHIBIT XXII

LOWER MAINLAND MOTORSPORT CENTRE
PRELIMINARY ASSESSMENT

CONCESSION REVENUE ESTIMATES
ALTERNATIVE 1

	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
● <u>ROAD COURSE</u>					
● Major Nat'l/Int'l	\$ 26,100	\$ 41,760	\$ 48,720	\$ 78,300	\$ 83,520
● Regional	52,200	34,150	52,200	46,980	52,200
● Local/Club	4,700	4,700	4,700	4,700	4,700
● <u>Sub-Total</u>	<u>\$ 83,000</u>	<u>\$ 85,610</u>	<u>\$105,620</u>	<u>\$129,980</u>	<u>\$140,420</u>
● <u>OVAL TRACK</u>					
● Major Nat'l/Int'l	\$ 14,700	\$ 16,800	\$ 28,350	\$ 28,350	\$ 28,350
● Regional	18,900	29,400	42,000	56,700	63,000
● Local/Club	200	400	400	400	400
● <u>Sub-Total</u>	<u>\$ 33,800</u>	<u>\$ 46,600</u>	<u>\$ 70,750</u>	<u>\$ 85,450</u>	<u>\$ 91,750</u>
● <u>DRAG STRIP</u>					
● Major Nat'l/Int'l	\$ -	\$ -	\$ 17,400	\$ 34,800	\$ 34,800
● Regional	7,000	26,100	43,500	62,640	62,640
● Local/Club	1,600	1,800	2,100	2,100	2,300
● <u>Sub-Total</u>	<u>\$ 8,600</u>	<u>\$ 27,900</u>	<u>\$ 63,000</u>	<u>\$ 99,540</u>	<u>\$ 99,740</u>
● <u>OFF-ROAD COURSE</u>					
● Major Nat'l/Int'l	\$ -	\$ -	\$ -	\$ 6,800	\$ 10,880
● Regional	1,020	800	2,000	3,700	5,440
● Local/Club	4,080	5,400	5,400	6,800	6,800
● <u>Sub-Total</u>	<u>\$ 5,100</u>	<u>\$ 6,200</u>	<u>\$ 7,400</u>	<u>\$ 17,300</u>	<u>\$ 23,120</u>
● <u>TOTAL</u>	<u>\$130,500</u>	<u>\$166,310</u>	<u>\$246,770</u>	<u>\$332,270</u>	<u>\$355,030</u>

in the Lower Mainland area and in the United States. Oval track concession revenue will likely be higher than other events since the facility is physically smaller and more concentrated than other tracks. Concessions are easily accessed by all spectators and evening events are expected to generate more concession revenue than daytime events. Due to their nature and location within the motorsport centre, off-road course events are expected to generate less concession revenue per capita than other events.

The preceding table also indicates the expected net revenue accruing to the motorsport centre once concession expenses have been covered. This contribution, for each facility, is approximately 38 percent of total concession revenue. Again, this calculation was based on experience gained at Portland International Raceway where, for the 1981/1982 fiscal year, 38 percent of total concession revenue accrued to the facility. The similar figure from one year earlier was 37 percent.

The per capita and net contribution characteristics described above were combined with the attendance projections described in Chapter 6 to determine total concession revenue estimates. Exhibit XXII (opposite) summarizes the concession revenue generating potential of the motorsport centre over the first five years of operation. The growth in concession revenue between the first year of operation and the fifth year of operation is 28.4 percent per annum, compounded annually. This is slightly lower than overall revenue growth associated with gate receipts and reflects total attendance growth as well as the increasing number of events each year.

Non-Motorsport User Revenue

The third significant revenue generating activity expected to occur at the proposed motorsport centre encompasses a variety of

non-motorsport uses. This type of utilization was described in Chapter 6 and includes a variety of recreational, safety and commercial interests.

At this stage of the planning process, non-motorsport organization revenue is very difficult to predict. A variety of local organizations have expressed interest in making use of the proposed motorsport centre. The extent of this use will depend on the facilities provided, the location of the centre and its availability. Nevertheless, non-motorsport users such as the Justice Institute of British Columbia, the B.C. Safety Council, the Ministry of Transportation and Highways, the B.C. Automobile Association, the Insurance Corporation of B.C., R.C.M.P., Transport Canada and others should be encouraged to utilize the facilities. This is especially important to the financial viability of the project as non-motorsport users are expected to carry out their activities during non-peak periods of motorsport user demand.

Estimates of non-motorsport revenue are very preliminary at this stage of the planning process. They need to be refined as and when more detailed planning work is undertaken.

Based on research conducted with non-motorsport groups and review of non-motorsport use of Portland International Raceway, a number of assumptions have been prepared to enable the development of reasonable estimates of non-motorsport user group revenue. These assumptions are summarized in the following paragraphs.

- Facility rentals are assumed to take place during off-peak periods a total of 50 times per year increasing at an annual rate of ten percent. Net income to the motorsport centre for each rental is estimated at \$500 in 1983 dollars.
- Permanent space rental to a number of organizations or groups representing non-motorsport activity is expected to

take place once the centre is developed. Monthly rental of approximately \$2,000 is expected during the first year of operation and is projected to increase, in constant 1983 dollars, at an annual rate of 20 percent as the motorsport centre becomes more widely known and better established.

Many of Portland International Raceway's forty or so non-motor-sport activities during the year are related to use by local and state-wide police and sheriff's offices. A substantial number of rentals is also attributed to the use of the race track facilities for filming of commercials and the like.

Based on the above estimates and assumptions, the following net revenue flow can be expected from non-motorsport use of the centre.

<u>NON-MOTORSPORT USER GENERATED REVENUE</u>					
<u>(1983 \$)</u>					
	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
● Daily Facility Rental	\$25,000	\$27,500	\$30,250	\$33,300	\$36,600
● Annual Space Rental	24,000	28,800	34,600	41,500	49,800
● <u>TOTAL NON-MOTOR-SPORT REVENUE</u>	<u>\$49,000</u>	<u>\$56,300</u>	<u>\$64,850</u>	<u>\$74,800</u>	<u>\$86,400</u>

While these levels of revenue are lower than those associated with gate and concession receipts, they are, nevertheless, significant and will make a noticeable contribution to the overall centre. It is important to realize, as well, that these revenues are not associated with direct costs and therefore represent a net positive contribution to the motorsport centre. Their value is, therefore, increased accordingly.

It is important to note that the levels of non-motorsport revenue discussed above are considered to represent minimum levels which can realistically be expected. Further research, and discussions with interested groups, could well lead to substantially higher commitments by non-motorsport user groups. Up to \$17,000 or \$18,000, for example, has been taken in by the Portland facility at one concert event. In addition, depending on the level of commitment which can be provided and the type of facilities required, a number of non-motorsport organizations would likely contribute to a portion of the capital costs associated with the development.

Operating Revenue Summary

Expected cash inflow levels from the three principal sources of revenue described above, as well as "miscellaneous" revenue, are summarized in the following table for each of the first five years of operation of the motorsport centre.

MOTORSPORT CENTRE REVENUE SUMMARY					
ALTERNATIVE 1					
(1983 \$)					
	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
● Motorsport Activity - Gate Receipts	184,700	258,900	423,400	629,200	692,300
● Motorsport Activity Concession Revenue	130,500	166,300	246,800	332,300	355,000
● Non-Motorsport Activity Revenue	49,000	56,300	64,900	74,800	86,400
● Miscellaneous Revenue (1)	<u>54,600</u>	<u>72,200</u>	<u>110,300</u>	<u>155,400</u>	<u>170,100</u>
● TOTAL REVENUE	<u>418,800</u>	<u>553,700</u>	<u>845,400</u>	<u>1,191,700</u>	<u>1,303,800</u>

It is expected that miscellaneous revenue, calculated as 15 percent of the total of all other revenue items, will be comprised primarily of advertising revenue. At Portland International Raceway, advertising income alone accounted for 14.7 percent of the total during the 1981/1982 fiscal year.

The magnitude of the total revenue stream for physical development Alternative 1 is considerable and is shown to grow at a rate of close to 33 percent per annum during the first five years of operation. Totals for the other alternatives are lower but still significant as described in Chapter 8. The largest growth, however, is expected to occur in the first few years, with the growth

(1) Miscellaneous revenue is calculated on the basis of 15% of the total of all other revenue items.

rate between the fourth and fifth years of operation decreasing to about ten percent.

Comparable information from Portland International Raceway (P.I.R.) is considerably different due to the extent of involvement planned for the motorsport organization itself. While total gross revenues from P.I.R. are in the \$1 million range (... in 1982 U.S. dollars ...), or close to a 1983 Canadian dollar equivalent of \$1.4 million, the revenue which accrued to the motorsport centre itself was only about \$200,000 U.S. during the 1981/1982 fiscal year. This equates, approximately, to \$276,000 Cdn. at 1983 levels.

OPERATING COSTS

Costs associated with the operation of the proposed motorsport centre have been estimated on the basis of the operational and management philosophies described in Chapter 6. In essence, this includes an organization which not only manages and operates the facilities themselves, but which becomes involved in the overall promotion and profitability of the centre. Operationally, however, the organizational structure is assumed to stop short of primary promotional responsibility for major events and to turn over responsibility for specific event operations (eg. scoring, emergency services, ticket sales and collection, etc.) to organizers themselves.

Operational costs for the proposed centre have been estimated on a preliminary basis. These estimates have been generated under the following three basic categories:

- salaries;
- materials; and
- services.

Operating costs are expected to vary little amongst the physical development alternatives. However, they are expected to increase, in constant 1983 dollars, over time as the level of activity at the centre expands.

The following paragraphs discuss briefly the assumptions used in developing operational cost estimates.

Salaries

Wages and salary costs were categorized into management and maintenance. Full-time salaried staff expected to be employed during the first year of operation, and their salaries, are as follows:

	<u>Annual Salary</u>	<u>Benefits @ 30%</u>	<u>Total Remuneration</u>
● General Manager	\$40,000	\$12,000	\$52,000
● Assistant Manager	30,000	9,000	39,000
● <u>Secretary/Assistant</u>	<u>25,000</u>	<u>7,500</u>	<u>32,500</u>
● <u>Sub-Total</u>	<u>\$95,000</u>	<u>\$28,500</u>	<u>\$123,500</u>

A total estimate of \$125,000 for this category, during the first year, was used in the analysis. It is expected that an expansion of total staff will be required as a substantial increase in activity at the centre takes place. The following assumptions were made to estimate total salary costs by year:

- one marketing assistant will be hired in the third year of operation at an annual salary, in 1983 \$, of \$30,000 per annum;
- one operational assistant will be hired in the fourth year of operation at an annual salary, in 1983 \$, of \$30,000 per annum; and

- all full-time management staff will receive an annual performance increase of seven percent per annum, excluding any increase allowance for inflation.

Application of these assumptions to the year one base estimates under Alternative 1 provides the following management staff remuneration totals:

<u>MANAGEMENT REMUNERATION (1983 \$)</u>				
<u>ALTERNATIVE 1</u>				
<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
\$125,000	\$134,000	\$182,000	\$234,000	\$250,000

Maintenance wage costs are expected to accrue as a result of one full-time caretaker of the property who would likely live on site. The caretaker's salary in year one is estimated at \$30,000 which translates into a total remuneration of \$39,000 once benefits are accounted for. A total of \$40,000 was used during the study. This remuneration is also expected to increase, for merit reasons, at seven percent per annum. It is also expected that a second maintenance person will be hired seasonally for six months a year beginning during the second year of operation at an equivalent annual salary of \$25,000 per year. Once benefits are included, this translates to \$16,250 of additional wage costs in the second operating year.

Application of these assumptions to the operating cost estimates for Alternative 1 provides the following maintenance staff remuneration totals:

MAINTENANCE REMUNERATION (1983 \$)

ALTERNATIVE 1

<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
\$39,000	\$58,000	\$62,000	\$66,400	\$71,000

It should be noted that a significant amount of project specific or event specific maintenance work is expected to be undertaken through external contracts. Thus, full-time and part-time wage costs described above represent only a portion of total maintenance costs.

Materials

Material costs associated with the operations and maintenance of the motorsport centre have been broken down into three categories, as follows:

- general supplies;
- guardrail replacement; and
- miscellaneous.

General Supplies include those materials needed on an ongoing basis to operate the centre and materials required for the various maintenance projects undertaken. A nominal estimate of \$15,000 is included for this cost category during the first year of operation. However, general supply expenditures are expected to increase in proportion to total motorsport centre activity.

Guardrail replacement represents an important cost at other motorsport centres. A provision for guardrail replacement of five percent of the total capital cost is included in this evaluation.

Miscellaneous material costs in the order of \$20,000 per year are anticipated. These costs, as well, are expected to increase in proportion to overall motorsport activity.

Material costs over the first five years of operation at the centre under Alternative 1 are summarized below:

	MATERIAL COSTS (1983 \$)				
	ALTERNATIVE 1				
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
• General Supplies	\$15,000	\$19,100	\$28,400	\$ 38,200	\$ 40,800
• Guardrail Replacement	22,000	22,000	22,000	22,000	22,000
• <u>Miscellaneous</u>	<u>20,000</u>	<u>25,500</u>	<u>37,800</u>	<u>50,900</u>	<u>54,400</u>
• <u>Sub-Total</u>	<u>\$57,000</u>	<u>\$66,600</u>	<u>\$88,200</u>	<u>\$111,100</u>	<u>\$117,200</u>

Services

Service costs associated with the operation and maintenance of the motorsport centre have been categorized as follows:

- utilities/garbage collection;
- outside contracts; and
- vehicle rental.

Each is discussed briefly in the following paragraphs.

Utilities and garbage collection represent a nominal, but essential, service cost associated with the development. Initial cost levels are estimated to be approximately \$12,000 per annum but these are expected to increase in proportion with overall motor-

sport activity at the centre. Garbage removal costs for major events would be the responsibility of the event operator.

Outside contract work includes specific repair work, maintenance and clean-up activities. Costs for these services during the first year of operation are estimated at \$25,000 and are expected to increase, in 1983 dollars, in proportion to site activity growth.

Vehicle rental costs are estimated to total approximately \$8,000 per annum. No increase in this allocation of the operating budget during the first five years of operation is anticipated.

Service costs, as described above, are summarized for Alternative 1 in the following table:

	SERVICE COSTS (1983 \$)				
	ALTERNATIVE 1				
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
● Utilities/ Garbage Collection	\$12,000	\$15,300	\$22,700	\$ 30,600	\$ 32,600
● Outside Contracts	25,000	31,900	47,300	63,700	68,000
● Vehicle Rental	<u>8,000</u>	<u>8,000</u>	<u>8,000</u>	<u>8,000</u>	<u>8,000</u>
● <u>Sub-Total</u>	<u>\$45,000</u>	<u>\$55,200</u>	<u>\$78,000</u>	<u>\$102,300</u>	<u>\$108,600</u>

Operating Cost Summary

Expected cash outflow levels resulting from principal cost categories, as described above, are summarized in the following

table. Cost totals for each of the first five years of operation are included.

MOTORSPORT CENTRE OPERATING COST SUMMARY					
ALTERNATIVE 1					
1983 \$					
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
• Salaries/Wages:					
- Management	\$125,000	\$134,000	\$182,000	\$234,000	\$250,000
- Maintenance	40,000	58,000	62,000	66,400	71,000
• Materials	57,000	66,600	88,200	111,100	117,200
• <u>Services</u>	<u>45,000</u>	<u>55,200</u>	<u>78,000</u>	<u>102,300</u>	<u>108,600</u>
• <u>TOTAL</u>	<u>\$267,000</u>	<u>\$313,800</u>	<u>\$410,200</u>	<u>\$513,800</u>	<u>\$546,800</u>

The above operating costs exclude property taxes, loan interest, capital repayment and depreciation. These individual cost items can only be determined during the detailed planning stages of the work and once the extent of possible capital contribution by various private and public sector groups is known. Only then can the expected debt load be determined, and only then can the scope of the eventual project be determined.

REVENUE AND EXPENSE SUMMARY

The numerous revenue and expense estimates developed for Alternative 1 are summarized in the following table for each of the first five years of operation:

MOTORSPORT CENTRE REVENUE/EXPENSE SUMMARY (1)

ALTERNATIVE 1

1983 \$

	<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
● Operating Revenue	\$418,800	\$553,700	\$845,400	\$1,191,700	\$1,303,800
● Operating Costs	<u>267,000</u>	<u>313,800</u>	<u>410,200</u>	<u>513,800</u>	<u>546,800</u>
● Operating Income(1)	<u>\$151,800</u>	<u>\$239,100</u>	<u>\$435,200</u>	<u>\$ 677,900</u>	<u>\$ 757,000</u>

Operating income, as shown above, is considerable and expected to increase at an annual rate of close to 50 percent per annum during the first five years of motorsport operation. The relationship of this level of income to operating costs which have been excluded and the capital costs for the project is discussed in Chapter 8.

(1) Excluding property and income taxes, depreciation, loan interest and capital repayment.

8. VIABILITY ASSESSMENT

The likelihood that a motorsport centre will be developed rests, in part, with its likely financial status once it becomes operational. Specific functional components of the development, and the activities held therein, will prove to be commercially viable and will, therefore, appeal to private sector investors. Other components of the overall project will not be self-sustaining unless they are subsidized in one form or another. However, these subsidies will assist in the provision of a facility which will enable the recreational interests of thousands of participants and spectators to be pursued.

It is apparent that there is good reason for both public sector and private sector investment in a project of this nature. The objective of this chapter is to review the revenue generating potential of the project relative to its overall costs. Its ongoing viability is important to all concerned. Additionally, the sensitivity of financial results to key capital cost assumptions made during the course of the study is discussed in this chapter.

MEASUREMENT OF PROJECT VIABILITY

A development, such as the proposed motorsport centre, should not be evaluated in the normal commercial manner which examines return on investment or other similar types of calculations. The intent of the development is to make provision for the social and

recreational interests of those involved as participants, club members, spectators, organizers and workers in motorsport activity. In order to achieve these objectives, however, the overall operation must be affordable.

For purposes of this evaluation, overall motorsport centre viability is discussed on the basis of the following concerns:

- the financial self-sufficiency of ongoing operations;
and
- the likelihood that sufficient capital funding is available to cover the total initial expenditures required.

Regardless of the recreational benefits and economic spin-offs associated with the proposed development, it can only be considered financially viable if both capital and operating costs can be covered.

OPERATIONAL SELF-SUFFICIENCY

The operating revenue and cost estimates described in Chapter 7 provide valuable insight into the cash flow position of the development. Under Alternative 1, operating income (1) is projected to grow from \$151,800 during the first year of operation to \$757,000 during the fifth year. This substantial level of positive net cash flow is sound evidence that the motorsport centre can operate on a self-sustaining basis. In fact, the operating income shown should be considered as the contribution that can be expected, on an ongoing basis, to cover costs directly linked with the capital investment required to develop the proposed motorsport centre.

(1) Operating income is calculated before property tax, income tax, loan interest and depreciation.

Alternatives 1 and 2 do not appear as viable on an ongoing basis as does Alternative 1 during early years of operation due to operational and parking capacity constraints. Comparative revenue and operating cost estimates for the three alternatives during the first year of operation are presented in the following table:

COMPARATIVE FINANCIAL PERFORMANCE			
OPERATING YEAR ONE			
(1983 \$)			
	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3
• Operating Revenue	\$418,000	\$412,900	\$356,000
• <u>Operating Costs</u> (1)	<u>267,000</u>	<u>267,000</u>	<u>267,000</u>
• <u>Operating Income</u> (1)	<u>\$151,800</u>	<u>\$145,900</u>	<u>\$ 89,000</u>

In all three cases, the motorsport centre is expected to be financially self-sufficient from the operating point of view. The difference in operating income is caused by capacity constraints under Alternative 2 and capacity as well as operational (ie. facility sharing) constraints under Alternative 3. Clearly, the most flexible alternative from the point of view of accommodating a variety of user groups in an unconstrained development area, leads to the highest contribution to capital and directly related costs and, therefore, increases the commercial attractiveness of the site.

(1) Excluding income tax, property tax, loan interest and depreciation.

CAPITAL FUNDING AVAILABILITY

Capital expenditures associated with the motorsport centre vary by alternative. The extent to which capital funding can be raised or the extent to which capital costs can be otherwise covered (eg. through debt or equity) is as important to the overall viability of the development as its ongoing self-sufficiency.

Capital cost estimates were detailed in Chapter 5. In that chapter, as well, some discussion was provided on the extent to which total capital investment in the project could be minimized while retaining the demonstrated capability of the overall concept. The following results were summarized at that time:

	<u>COMPARATIVE CAPITAL REQUIREMENTS</u>		
	<u>(1983 \$)</u>		
	<u>ALTERNATIVE</u> <u>1</u>	<u>ALTERNATIVE</u> <u>2</u>	<u>ALTERNATIVE</u> <u>3</u>
● Original Capital Cost Estimate	\$10,869,000	\$11,990,000	\$10,126,000
● Possible Capital <u>Reduction</u>	<u>2,264,000</u>	<u>1,816,000</u>	<u>1,858,000</u>
● Reduced Capital <u>Cost Estimate</u>	<u>\$ 8,605,000</u>	<u>\$10,174,000</u>	<u>\$8,268,000</u>

The reader is reminded that capital cost estimates exclude "soft" development costs, land costs and the construction of facilities not considered to be essential initially to motorsport event operations.

As was noted earlier, the nature of this undertaking should appeal to a variety of organizations and groups from the capital investment point of view. It is beyond the scope of this study to identify specific sources of capital funding and the expected

contribution of each. Nevertheless, the following types of organizations are expected to be possible capital contributors to the project:

- motorsport organizers and interest groups;
- non-motorsport users of the facility;
- commercial enterprises operating on-site;
- major advertisers at the centre.
- Government of British Columbia/Government of Canada; and
- Greater Vancouver Regional District.

Other types of organizations which could contribute to the capital involved will likely be identified as detailed planning is undertaken.

In addition to possible contributors mentioned above, the revenue generating power of the motorsport centre itself is expected to be sufficient to enable it to carry some debt load on its own. Based on the operating income identified for each of the first five years of operation under Alternative 1, an equivalent mortgage which could be repaid on the basis of a 25-year loan repaid at a rate of 12% per annum was calculated. The results of these calculations are summarized in the following table:

DEBT REPAYMENT CAPABILITY

ALTERNATIVE 1

(1983 \$)

• Estimated annual contribution to capital:

<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
151,800	239,900	435,200	677,900	757,000

• Mortgage debt which can be repaid (1):

<u>YEAR 1</u>	<u>YEAR 2</u>	<u>YEAR 3</u>	<u>YEAR 4</u>	<u>YEAR 5</u>
1,191,000	1,882,000	3,413,000	5,317,000	5,937,000

It is evident from the preceding table that the motorsport centre is capable of repaying substantial portions of the capital costs incurred based on estimates and projections described earlier. This capability is enhanced as the operations become established and activity at the centre increases.

The above debt repayment capability expectations are related to physical development Alternative 1. Similar capability associated with Alternative 2 and Alternative 3 is lower. However, the capital costs under Alternative 3 are lower than those for Alternative 1, while Alternative 2 represents the highest cost option.

Finally, it needs to be remembered that capital cost estimates exclude land costs. The value of the land must be considered during the evaluation of this proposed development. It is unlike-

(1) Calculated on a term of 25-years and an annual interest charge of 12% compounded annually.

ly that the overall operation could support a market rent for the land in question, in addition to other major debt loadings. On the other hand, depending on the levels of capital contribution obtained from various sources, some repayment of land costs may be possible and can be considered likely.

VIABILITY SUMMARY

A final assessment as to the financial viability of the motorsport centre development must be carried out during the detailed planning process. Preliminary indications show, however, that the operation of the centre will generate substantial levels of revenue and attract thousands of participants and spectators on a monthly basis. Furthermore, it is expected to satisfy the needs of thousands of people and many organizations in British Columbia who/which are involved directly or indirectly with this growing sport.

While the project is not expected to provide a commercial rate of return in its entirety, specific components are likely to be commercially attractive to the private sector. In addition, the development will likely be appealing to a number of public sector organizations, can cover its own operating costs and can generate enough revenue to contribute significantly to capital development costs. In summary, the financial capability of the proposal, in combination with the recreational and social benefits which will be derived, indicate that the concept of a motorsport centre should be evaluated and planned in more detail.



9. DEVELOPMENT IMPLICATIONS

The development of a motorsport centre anywhere in the Lower Mainland will generate a number of significant impacts, many of which will be positive and some of which will be negative. Any undertaking of this stature will certainly have a variety of implications associated with it.

This chapter provides a brief discussion of the types of implications which will likely result from the detailed planning and development of a motorsport centre. It is not intended to be an impact analysis, but rather to include pertinent information on a number of areas of concern. More extensive assessment of development impacts should be carried out as and when detailed planning work is carried out.

RECREATIONAL OPPORTUNITIES

Perhaps the single biggest advantage of the proposed centre is the opportunity it will create for the thousands of people involved in motorsport activity as either participants, spectators or organizers. If developed in the manner described, motorsport enthusiasts will be ensured of quality facilities for a long time to come.

The nature of the proposed motorsport centre is such that it will appeal to the dozens of small motorsport groups. Many, if not most, of these organizations make motorsport activity and

interests a part of their family leisure activities. As a result, the social orientation of the centre, with the related amenities provided, is expected to be substantial.

Research has shown that membership levels for many motorsport associations and groups are constrained due to the inadequacy or unavailability of facilities at the present time. It is expected that a surge in motorsport interest and participation will occur as and when a suitable facility for all users is developed.

In summary, development of a motorsport centre in the Lower Mainland area will enable large numbers of people to enjoy this sport, which is continually growing in popularity, in a safe and regulated environment. This advantage will take on even greater significance with the closing of Action Raceway and Westwood Raceway. Such benefits, however, can only be maximized if the timely development of a suitable centre takes place so as to avoid any possibility of declining interest from lack of facilities or events.

ECONOMIC BENEFITS

A detailed study of economic benefits likely to occur from the development of a motorsport centre has not been undertaken. However, it is widely recognized that competitive motorsport activity supports, in part, many commercial enterprises throughout North America. This is confirmed by the operators of Portland International Raceway who claim that the facility generates about \$3 million in additional revenue annually in the surrounding community.

It is not possible, at this stage of evaluation, to estimate direct expenditures which will take place into the local and regional economy as a result of motorsport centre development.

Based on the magnitude of the overall operation and its revenue generating power, economic spin-off will be considerable. And the eventual limit of additional local and regional economic activity which might possibly be generated is immense. The 1982 Formula 1 race in Montreal, for example, was viewed by some 550 million people in 113 countries. Studies have shown that each Grand Prix race in Montreal brings about \$16 million in revenue to the city (... from the 100,000 or so tourists ...) and another \$9 - \$10 million in indirect publicity.

While these numbers are large, it is not at all impossible that a world class event of this calibre could be staged annually in Vancouver in future years, if a suitable motorsport centre was established. But the many smaller events which will be held will also generate substantial economic activity. A survey undertaken for the International Conference of Sports Car Clubs during the 1982 racing season in British Columbia and the northwestern part of the United States, showed that average driver expenditures during a race weekend totalled \$179.00, while similar expenditures for race workers totalled \$125.00. Average length of stay was determined to be three days from the same survey.

While spectator expenditures are not likely as high as those involved directly in the competitive aspects of the sport, estimates of spending by individuals at the more prestigious events go as high as \$100 (Cdn.) per day. A large portion of the visitor expenditure total is also expected to originate from United States residents. Research carried out during the study showed that cross-border competitiveness and interest in travelling to attend motorsport events, as well as club activities, was high. Both are expected to increase as new facilities are developed in the Lower Mainland.

In summary, economic spin-off and direct, as well as indirect, job opportunities resulting from motorsport centre development are

expected to be substantial. Local, regional and provincial benefits will be realized. Machine shops, engine rebuilders, automotive supply operators, body work shops, race car manufacturers, contractors, hotels, motels, restaurants and other businesses located in the surrounding area will experience positive spin-offs from development and operation of the centre.

NOISE GENERATION

Due to concerns that noise generated at the proposed motorsport centre will represent a negative factor associated with the development, a preliminary examination of the noise levels involved, and attenuation measures which would be appropriate at the Alder-grove site, was carried out. Details of the results of this analysis are included in Appendix D, while a summary is provided below.

A basic representative situation involving one noise source on the site was investigated. Results must not be considered as a definitive assessment since only one noise source was evaluated and analysis was based on minimal background information.

Assuming a peak noise level of 118 dBA at 10-metres from two drag racers operating for a total time of 30 minutes in a 24-hour day, in addition to related traffic and patron noise, a 24 hour Leq of 65 dBA (± 5 dB) is estimated at 180 metres (... approximately the distance from the nearest local residence in the United States to the location of the proposed drag strip ...). Peak noise levels at that distance will be in the order of 77 dBA (± 5 dB). The 24-hour Leq represents an average noise level, based on energy, over a 24-hour period.

The introduction of a 10-metre high berm and fence combination can provide a net noise reduction of up to 13 decibels under optimum conditions. It will also reduce the 24-hour Leq to approximately 55 dBA (± 5 dB) and the peak noise levels to approximately 64 dBA (± 5 dB).

For comparative purposes, the following 24-hour Leq noise levels are provided:

<u>Leq 24</u>	<u>Description of Condition</u>
40 - 50	quiet rural setting with minimal traffic and only at a distance.
50	quiet suburban setting with minimal local traffic and no main streets within several blocks.
55	Residential street with a main street a half block away.
60 - 75	Major street with a house setback of 30 metres from the street.
70 - 75	Busy downtown intersection such as the corner of Burrard Street and Georgia Street.

To relate the feeling for the effect of an instantaneous noise level of 75 to 80 dBA, it may be described as making conversation difficult at a distance of two or three metres.

In summary, some negative impacts from noise generation in the immediate area of the motorsport centre can be expected. Sound attenuation measures can reduce the severity of this impact and capital costs for appropriate measures have been included. A significant change in the noise environment around the motorsport centre is, nevertheless, expected to occur. It should be noted, however, that the number of individual families currently living within the immediately affected area is not large. It should also be noted that further detailed examination of noise impact and attenuation measures should be undertaken during the detailed planning stage of the development process.

SAFETY IMPLICATIONS

The establishment of a motorsport centre will allow competitive motorsport activity to be located in a safe and regulated

environment. It is reported that, at the present time, various individuals and groups hold street races due to the unavailability of segregated facilities. The extent to which this type of activity is carried out is impossible to measure. Authorities, however, do support suggestions that drag racing facilities would cut down, but not eliminate, street racing in the Lower Mainland. It is also important to recognize that competitive street events would likely increase should facilities such as Westwood Racetrack and Action Raceway be closed and not replaced.

Research identified an existing problem relating to off-road vehicles and motorcycles as well. Many owners currently use Crown land in the area surrounding Vancouver to undertake group activities. The resulting negative impact on the environment is substantial according to the Forest Service. It is recognized that a motorsport centre would not solve all of the problems associated with off-road activity, but it would provide a suitable facility for many who use Crown land at the present time and, therefore, lessen the negative impacts currently experienced.

IMPLEMENTATION

A large number of factors have been addressed as part of this pre-feasibility assessment. Many require more careful and detailed analysis. Should the motorsport centre proceed, it is recommended that a detailed planning study be undertaken to determine, more accurately, the physical and operational characteristics of the project. Furthermore, more detailed analysis of the suitability of potential sites should be carried out. The timing of this action is important since both Action Raceway and Westwood Raceway are to be closed in the near future. Involvement and interest in organized, competitive drag racing in the Lower Mainland has declined since appropriate paved facilities have not been available. The same situation will occur should other motorsport facilities be closed and not replaced.

CONCLUSIONS

The opportunity currently exists for motorsport organizations and groups to work in unison with regional and provincial levels of government and with the private sector to effectively expedite the development of a motorsport centre in the Lower Mainland. The demand for and recreational value of such a project is substantial.

Perhaps the most encouraging factor surrounding this development prospect is its revenue generating potential. Once developed and promoted properly, the drawing power of the motorsport centre will go a long way towards subsidizing the many small groups and organizations who will make use of the facility.

In summary, preliminary analysis indicates that the recreational, social and economic value of developing a motorsport centre is high. Private sector and public sector interest in the project is expected to be substantial. While some negative impacts will be felt as a result of the development, many positive impacts will also be experienced. If the development process is properly managed and the motorsport centre is effectively operated, the stature and value of the project can be expected to increase over an indefinite length of time in years to come.



APPENDIX A

**SITE DETAILS
AND CHARACTERISTICS**



Appendix A: Inventory of Existing and
Potential Motorsport Sites

is available

through the GVRD Parks Dept.
2034 West 12th Avenue
Vancouver, B.C.
731-1155, Local 144



APPENDIX B

CAPITAL COST DEVELOPMENT

UNIT COSTS AND ASSUMPTIONS



INTRODUCTION

A number of assumptions and unit cost estimates were used during the development of capital costs associated with the proposed motorsport centre. The capital cost estimates themselves are preliminary in nature. Nevertheless, they do represent the order of magnitude of capital costs expected to be incurred, excluding land acquisition, to bring the overall development to the operational stage described in the body of this report.

Due to the significance of the capital expenditure required to meet the recreationally oriented motorsport demands of Lower Mainland residents, the assumptions made in developing these costs and the unit cost estimates used are detailed in this appendix.

UNIT PRICES

Unit price estimates were researched and used for the following capital cost components:

- excavation;
- utilities;
- pavement;
- gravelled parking areas;
- guardrail/protective fencing;
- lane painting;
- bleachers (including concessions);
- fencing (security and sound attenuation); and
- control towers.

Unit prices used in each case are summarized below. All prices are provided in 1983 Canadian dollars.

Excavation

Excavation costs were estimated on the basis of a 15 cubic yard scraper and a haul distance of 1500 feet. The unit price estimated and used for calculation purposes was \$3.40 per cubic metre.

Utilities

Utility costs were estimated to fall in the range of \$120,000 to \$150,000. A "utility allowance" of \$130,000 is included in the summary of capital costs in the report.

Pavement

Capital costs associated with all paved areas, including race tracks and paved parking areas, were estimated on the basis of a high quality design including the following:

- a 150 mm gravel sub-base; overlain by
- a 75 mm bituminous base course; and
- a 75 mm bituminous wearing surface.

The unit cost, in 1983 Canadian dollars, used for all paved areas was \$16.20 per square metre.

Gravelled Parking Areas

Some parking lots were assumed to be developed on the basis of a gravel surface and sub-base only to reduce capital costs. This technique is expected to be more than sufficient for much of the parking area required. The unit price used, based on a ten inch depth of gravel or crushed stone, was \$5.00 per square metre.

Guardrail/Protective Fencing

The type of protection required at automobile racing tracks was investigated, as were the standards for major events of international calibre. Different treatments were included for the different types of facilities included in the proposed motorsport centre. The following unit prices were used:

- guardrail ... "W" section steel on wooden posts - \$66.00/metre;
- guardrail ... end sections - \$50.00 each; and
- "Jersey" barrier ... for protection of critical areas such as pit row - \$82.00/metre.

The road course was designed with guardrail along the entire length on appropriate sides of the track, "Jersey" barrier in selected areas (eg. the pit area) and regular security fencing around the entire circumference. The oval track was designed with guardrail around the entire circumference with security fencing around the outside. No special protective fencing was provided along the drag strip.

Lane Painting

Lane painting on the race tracks themselves was estimated on the basis of 4-inch wide lines at a cost of \$0.26 per metre.

Bleachers

Bleachers for all race courses were assumed to be a permanent design and constructed in metal or concrete. Allowances were incorporated into unit costs for development of concession areas beneath the bleachers themselves. An average cost for bleachers up to 30 tiers high was used which totalled \$34.25 per seat.

Fencing

Security fencing and sound attenuation fencing was incorporated into total capital costs for the motorsport centre. Chain link security fencing with a height of six feet was estimated to cost \$32.00 per metre. A ten foot high wooden (... pine or spruce ...) sound attenuation fence is suggested for selected areas at the centre and was costed at \$34.50 per metre.

Control Towers

Control and timing towers for the race courses themselves were costed on the basis of \$400.00 per square metre. This is expected to provide a permanent installation with the basic area and requirements for race control, but without the extra amenities that may be desirable but are not essential during initial stages of development.

Tree Planting

The above unit costs were translated into total capital cost estimates which are described in the report. Tree planting costs were also incorporated into expenditure estimates for sound attenuation purposes. Tree planting estimates were based on the amount of sound absorption or buffering that could realistically be achieved under each alternative, and the volume of planting required to meet that goal.

FACILITY COST DEVELOPMENT

The application of unit pricing to specific physical requirements of the proposed development is described in the following paragraphs.

Road Course

Application of unit costs to road course development is described for various components of the facility below:

- Track
 - 15 metres wide x 4 kilometres long
= 60,000 square metres @ \$16.20 = \$972,000.
- Pit Area
 - Pit lane @ 10-metres wide x 250-metres long
= 2,500 square metres @ \$16.20 = \$40,500.
 - Pits @ 10-metres deep x 230-metres long
= 2,300 square metres @ \$16.20 = \$37,300.
 - Pit storage @ 10-metres deep x 230-metres long = 2,300 square metres @ \$16.20 = \$37,300.
- Protection
 - 4 km of guardrail with barrier fencing @ \$100/metre = \$400,000.
 - 2 km of "Jersey" barrier or concrete wall @ \$82/metre = \$164,000.
- Painting
 - 10 km of line painting (.. 2 edges @ 4 km plus miscellaneous ..) @ \$0.26/m. = \$2,600.
- Buildings
 - Pit storage building @ 10 m x 230 m
= 2,300 square metres @ \$250. = \$575,000.
 - Control tower @ 50 square metres
@ \$400 = \$20,000.
- Bleachers/Concessions
 - 9,000 seats for 15,000 to 16,000 spectators @ \$34.25 = \$308,300.

This cost estimate applies to Alternatives 1 and 2 where the road course is designed as a separate facility. In Alternative 3, the road course is partially combined with the oval course and the bleachers for the latter also serve the road course. the total cost of the road course under Alternative 3, therefore, is reduced by \$137,000 (ie. 4,000 seats at \$34.25/seat) to a new total of \$2,420,000.

Drag Strip

Application of unit costs to drag strip development is described for various components of the facility below:

- Track - 15-metres wide x 1200-metres long
= 18,000 square metres @ \$16.20 = \$291,600.
- Return Lane - 4-metres wide x 1200-metres long
= 4,800 square metres @ \$16.20 = \$7,800.
- Starting Area - 60-metres x 60 metres
= 3,600 square metres @ \$16.20 = \$58,300.
- Pit Area - 90-metres x 210-metres gravelled area
= 18,900 square metres @ \$5.00 = \$94,500.
- Control Tower - 50 square metres @ \$400. = \$20,000
- Bleachers - 7500 seats @ \$34.25 = \$256,900.
- Concession Area - Estimate when tied to spectator seating = \$100,000.

Drag strip development cost estimates total \$899,100 which have been rounded to \$899,000 for use in the report.

Oval Course

Application of unit costs to oval course development is described for various components of the facility below.

- Track - 15-metres wide x 600-metres long (3/8 mile) = 9,000 square metres @ \$16.20 = \$145,800.
- Pit Area - 60-metres x 180-metres gravelled = 10,800 square metres @ \$5.00 = \$54,000.
- Bleachers - 4,000 seats @ \$34.25 = \$137,000.
- Concession Area - Estimate when tied to spectator seating = \$50,000.
- Lighting - Separate estimate based on total requirements = \$100,000.
- Protection - 600-metres of guardrail @ \$65. = \$39,000.
- 600-metres of guardrail with fencing @ \$100. = \$60,000.

Oval course development cost estimates total \$585,800 which have been rounded to \$586,000 for use in the report.

This cost estimate applies to Alternative 1 and Alternative 2 where the oval course is designed as a separate facility. In Alternative 3, the oval course is partially combined with the road course. The amount of track paving is, therefore, reduced by approximately 6,700 square metres providing a saving of \$108,500 (ie. 6700 sq.m. @ \$16.20 = \$108,540). However, a more complex guard rail system for the combined facilities will cost about \$20,000, leaving a net cost reduction of \$88,500, and a new total cost of \$497,300 (say \$497,000) for the oval course under Alternative 3).

Off-Road Course

Specific cost estimates have not been developed for the off-road course since it is assumed that total excavation costs will cover initial development of a suitable track. Furthermore, it is expected that concessions, bleachers and other structures developed for the other major facilities will be located in a manner that they can and will be used for major off-road events as well.

Sound Attenuation and Security Fencing

Application of fencing type varies by alternative as follows:

- Alternative 1 - 1900 metres of 10-foot pine sound attenuation fencing @ \$34.50/m. = \$65,500.
 - 4800 metres of 6-foot chain link security fencing @ \$32.00/m. = \$153,600.
- Alternative 2 - 1600 metres of 10-foot pine sound attenuation fencing @ \$34.50/m. = \$55,000.
 - 3900 metres of 10-foot chain link security fencing @ \$32.00/m. = \$125,000.
- Alternative 3 - 3300 metres of 10-foot pine sound attenuation fencing @ \$34.50/m. = \$114,000.
 - 2200 metres of 6-foot chain link security fencing @ \$32.00/m. = \$70,500.

Excavation

Application of unit costs varies by alternative as follows:

- Alternative 1 - approx. 300,000 cubic metres @ \$3.40 = \$1,020,000.
- Alternative 2 - approx. 600,000 cubic metres @ \$3.40 = \$2,040,000.

- Alternative 3 - approx. 300,000 cubic metres @ \$3.40
= \$1,020,000.

The track layout configuration under Alternative 2 will require more cut and fill during the development stage and, therefore, capital costs for excavation under that option are higher.

Parking

Parking area cost estimates were developed on the basis of demand, available area and a combination, under each alternative, of paved parking areas (... which can double for slalom events ...) and gravelled parking areas. Applications of costs and assumptions made, by alternative, are described below.

- Alternative 1 - Due to the overall configuration of the motorsport centre, parking under this alternative was designed to accommodate the approximate peak demand at each facility. Normal peak at drag events was estimated at 7,500 people, while an activity peak of 4,000 people was used for oval track events and a peak of 8,000 people was used for road course events. Parking lots for each facility were designed on the basis of two people per car.

During major events attracting upwards of 15,000 people, it is expected that the average number of spectators per car will rise to three and that the 5,000 vehicles will be accommodated by using more than one parking lot. Nevertheless, the road course lot was raised to this capacity to ensure adequacy.

Cost estimates were developed as follows:

- Drag Strip - paved lot for 3,500 cars = 97,500 square metres @ \$16.20 = \$1,579,500, (say \$1,580,000).

- Road Course - gravel lot for 5,000 cars
= 139,000 square metres @
\$5.00 = \$695,000.
- Oval Track - gravel lot for 2,500 cars
= 69,500 square metres @
\$5.00 = \$347,500 (say
\$348,000).
- Alternative 2 - Due to the protection of specific land segments, available parking area was constrained under this alternative. Total capacity is therefore lower than that under Alternative 1.

Cost estimates were developed as follows:

- Drag Strip/
Oval Track - paved lot for 4,500 cars =
125,000 square metres @
\$16.20 = \$2,025,000.
- Road Course - gravel lot for 3,500 cars
= 97,500 square metres @
\$5.00 = \$487,500 (say
\$488,000).
- Alternative 3 - Due to overall site layout constraints, the available parking area was also limited under this alternative. Total capacity is therefore lower than under Alternative 1.

Cost estimates were developed as follows:

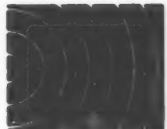
- Drag Strip/
Oval Track - paved lot for 4,000 cars =
112,000 square metres @
\$16.20 = \$1,814,400 (say
\$1,814,000).
- Road Course - gravel lot for 3,500 cars
= 97,500 square metres @
\$5.00 = \$487,500 (say
\$488,000).

While some alternatives provide for less parking capacity than others, it is anticipated that availability of parking will not unduly affect attendance projections described in the report.

APPENDIX C

**NOISE IMPACT
AND
SOUND ATTENUATION**





**Barron &
Associates**

83 06 06

Project: 1007.831

Mr. N. Millbank, Managing Director
Novacorp Consulting Inc.
#500 - 1282 West Georgia
VANCOUVER, B.C.
V6E 3J7

Dear Mr. Millbank:

Re: IDSA Motor Sport Noise Study

In response to Mr. Herb Spooner's request, Barron & Associates forward the following preliminary comments regarding the site layout and its effect on noise radiated to residential dwellings in the area.

The operation of three motor sport racing facilities will generate high noise levels and produce a significant adverse reaction from local residents. Noise levels will be produced in the order of 110 to 115 dBA at a distance of 10 m from a vehicle at full throttle and will be audible and significant under most conditions at distances up to 1/2 mile. A more thorough analysis is required to objectively and subjectively evaluate the effect of these three facilities.

The following factors regarding site layout may have significant effects with respect to noise attenuation.

1. Noise attenuation through the atmosphere as a result of spherical divergence results in noise reductions in the range of four to six decibels per doubling of distance from a source. Simply stated moving a noise source further away from an object will decrease noise levels at the receiver.
2. Noise barriers between a Noise Source and a Receiver may provide up to approximately 20 decibels of noise reduction under ideal conditions. Noise barriers may be loosely defined as any solid object blocking the line of sight path between a Source and Receiver. Items which may be included in this category include solid objects such as buildings, fences, natural topography, man-made berms and/or fences etc.

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3. Dense tree stands of 40 m deep or greater can provide significant sound absorption and attenuation.

Based on these three principles we provide the following comments regarding site layouts.

We have outlined the primary factors to be considered in the site layout with respect to noise. However at this preliminary stage, and at the current level of effort we cannot provide specific suggestions without a detailed analysis of the individual noise sources.

Pit/Starting/Staging Areas

Locate these areas, which represent stationary noise sources over longer periods of time, as far from all adjacent residential areas as possible. The following specific comments are suggested.

1. Location of the pit and staging area of the drag strip on the southeast end of the site may be advised. The development of a trailer park bordering the southwest side of the site and four farms in the U.S. adjacent to the central and west part of the site favour the starting area on the east side.
2. Location of the pit and starting area of the oval and road racing track in the valley area in the north central area of the site will maximize noise shielding provided by existing topography.

Track Layouts

3. Design all track layouts to provide as great a distance as possible between the track and local residences.
4. Where possible utilize the natural shielding effect of local topography such as hills and thick deep stands of trees.

Fences/Berms/Buildings - Noise Barriers

5. Locate buildings, fences, and man-made berms to provide maximum noise shielding effects. The performance of noise barriers is improved by increasing their height and locating them as close as possible to the noise source.

Further to our discussion June 1, we have visited the site to confirm population distribution and to review the site with respect to the design of large man-made barriers (berms/fences). On a preliminary basis we comment as follows.

Large continuous barriers can provide a significant benefit along the south perimeter of the site. Sketch No. 1 appended, outlines our thoughts at this time regarding the most beneficial use of berms and barriers.

The residences circled on Sketch No. 1 due to their raised elevations have a clear line-of-sight of the valley sections on the site. Extremely large barriers may be required to shield some of these properties.

It should also be noted that prevailing easterly and westerly winds will negate the attenuation effect of barriers in the direction of the wind at speeds above 15 kph.

We present the above comments strictly as preliminary information and advise that a detailed evaluation and design program will be required to assess and mitigate the noise impact of the proposed project.

Yours very truly,

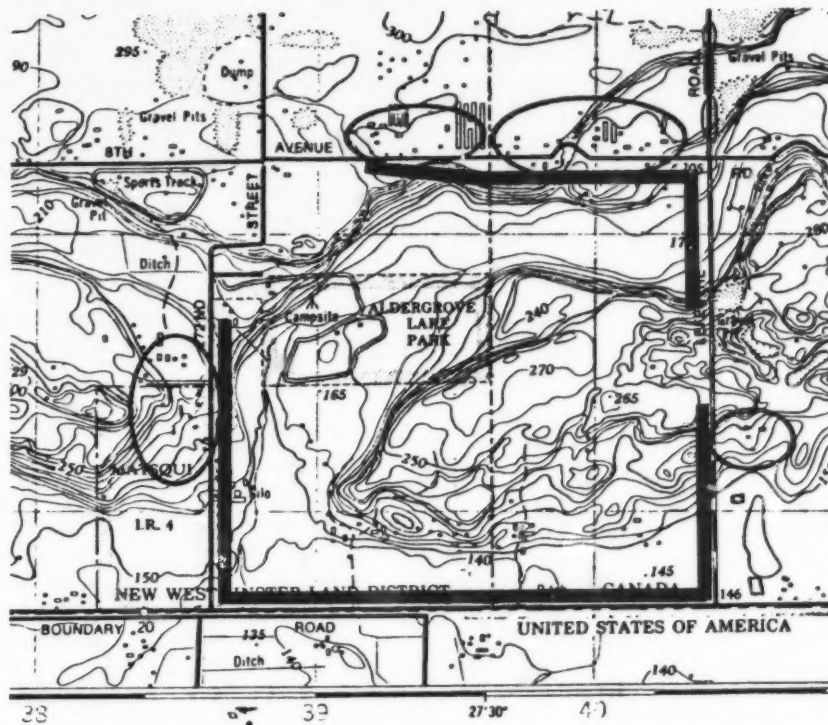
BARRON & ASSOCIATES



Gordon D. Hall, C.E.T.

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Barrier (Berm/Fence Combination)

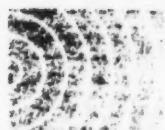


Residential Areas Overlooking Valleys

Sketch No. 1

Project: 1007.831

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**Barron &
Associates**

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JUN 17 1983

Novacorp

Mr. N. Millbank
Novacorp Consulting Inc.
#500 - 1282 West Georgia
VANCOUVER, B.C.
V6E 3J7

Dear Mr. Millbank:

Re: IDSA Motor Sport Noise Study

As directed at our meeting of 83 06 06, Barron & Associates have reviewed a typical site noise scenario. The following discussion is provided to objectively appraise you of the magnitude of a typical noise impact and the probable mitigating effect of large man-made barriers. We have purposely reviewed a very basic noise situation to provide a "ballpark" assessment within the scope of our current minimal budget for this work. As a result we must caution that the situation described, although representative, only reviews one noise source on the site and is based on minimal background data, the result should not be considered as a definitive assessment.

Sketch No. 1A illustrates the situation of the drag strip located parallel to the international boundary at a distance of approximately 180 m from the nearest local U.S. residence. Assuming a peak noise level of 118 dBA at 10 m from two drag racers operating for a total accumulated time of 30 minutes in a 24 hour day, and related traffic and patron noise we estimate a 24 hour Leq of 65 dBA (± 5 dB) at 180 m. Peak noise levels at this distance will be in the order of 77 dBA (± 5 dB). The 24 hour Leq represents an average noise level (based on energy) over a 24 hour period.

The introduction of a 10 m high berm and fence combination can provide a net noise reduction of up to 13 decibels under optimum conditions and will reduce the 24 hour Leq to approximately 55 dBA (± 5 dB) and the peak noise levels to approximately 64 dBA (± 5 dB). The noise reduction provided by the barrier will be reduced as the height of the receiver or source increases above our assumed height of approximately 1 m.

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Residences at elevations above the plain or valley level, i.e. those on the ridges bordering the east and west side of the site will normally have a clear view of the site and will not benefit from shielding provided by a barrier. They are however at a greater distance, and therefore the 24 hour Leq environment experienced is estimated to be in the range of 50 to 65 dBA.

We must reiterate that the levels quoted are roughly estimated for one activity during a day. The combined effects of local traffic, simultaneous racing events and other noise activities may further increase the noise environment.

To evaluate the estimated noise environment in terms of an accepted criterion we refer to the 24 hour Leq of 55 dBA used by CMHC as a residential development guideline. Our discussion above indicates that with the careful design and location of barriers a minimum Leq 24 of 55 to 65 dBA can be expected at local residences. We estimate this to represent an increase in the noise environment in this area on a single day of approximately 10 to 20 dB, an increase which will subjectively result in what we can only estimate to be a significant adverse reaction from residents.

To provide you with a "feel" for 24 hour Leq noise levels in terms of urban and rural noise environments we provide the following table.

<u>Leq 24</u>	<u>Description of Condition</u>
40 to 45	Quiet rural setting, minimal traffic and only at a distance.
50	Quiet suburban setting, minimal local traffic. No main streets within several blocks.
55	Residential street, main street may be half a block away.
60 to 75	Major street, house setback of 30 m from street.
70 to 75	Busy downtown intersection, (i.e. Burrard & Georgia).

To relate a feeling for the effect of an instantaneous noise level of 75 to 80 dBA, it may be described as making conversation difficult at a distance of 2 to 3 m.

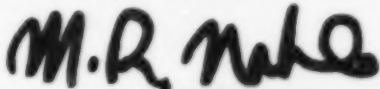
A number of alternative methods of evaluating the subjective reaction to this noise exist and should be employed in a more detailed study. At this point, based on the estimated data presented above, we conclude that a significant change in the noise environment will result even with the use of barriers, notwithstanding the fact that barriers will reduce noise levels by up to 13 decibels.

We reiterate that we do not consider this review to be in any way conclusive but present it as a very cursory examination of the problem at this preliminary stage.

If you have any questions please contact the undersigned.

Yours very truly,

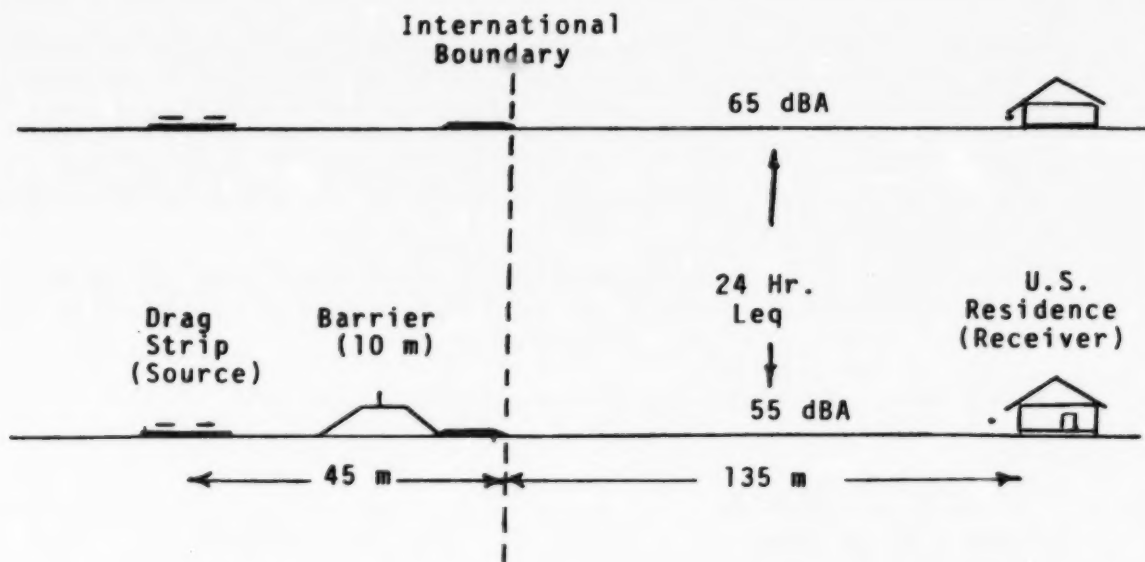
BARRON & ASSOCIATES

A handwritten signature in dark ink, appearing to read "M.R. Noble". The signature is stylized with a large, looped "M" and a cursive "Noble".

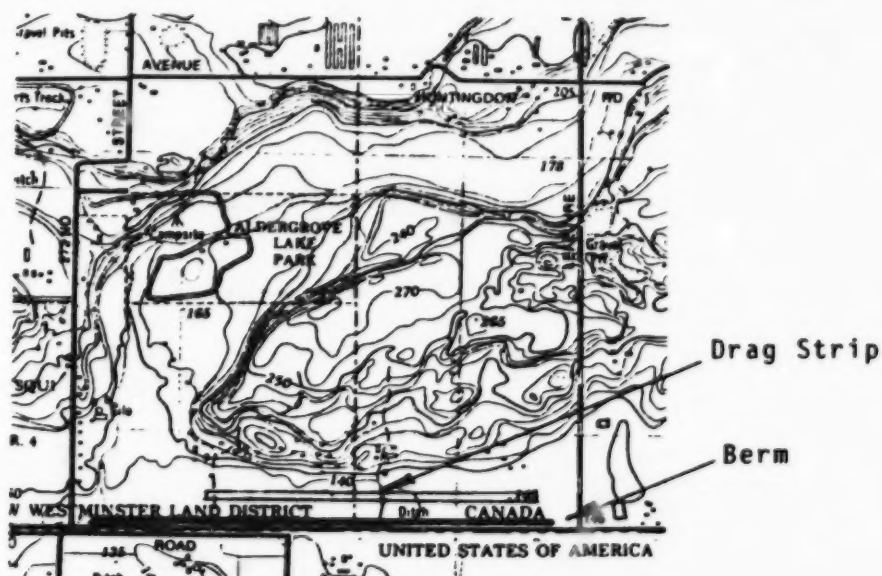
Michael R. Noble, M. Sc.

GDH:sqv 6550A

Encl.



Sketch 1B Typical Barrier Effect



Sketch 1A Location of Barrier

POOR

QUALITY

ORIGINAL